ESI MIND TOOLS™ SERIES

Quick Reference Guide
for
FINANCIAL PLANNING FOR VISICALC® AND THE APPLE II®

(80-Column Version)

EXPERT SYSTEMS, INC.

ESI MIND TOOLS™ SERIES

QUICK REFERENCE GUIDE

FOR

FINANCIAL PLANNING FOR VISICALC® AND THE APPLE II®

(80-Column Version)

EXPERT SYSTEMS, INC.

Howard W. Sams & Co., Inc.
4300 WEST 62ND ST. INDIANAPOLIS, INDIANA 46268 USA

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Edited by: *Jim Rounds*

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QUICK REFERENCE GUIDE

The "Quick Reference Guide" illustrates a typical screen and includes a flow diagram that walks you through the entry and calculation procedures for each of the 18 financial calculators contained on your "Financial Planning for VisiCalc® and the Apple II®*" diskette. If your primary interest is to begin immediately to use these calculators on your computer, you should refer to this guide for instructions. The system requirements are listed below. All of the calculators were designed for an 80-column screen, although they can be used on a 40-column screen.

SYSTEM REQUIREMENTS

- 64K memory
- 16-sector DOS
- one disk drive
- 80-column card recommended

Table and figure numbers in this Quick Reference Guide are keyed to the larger text in the three-ring binder. Thus, there are some sequential omissions.

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*VisiCalc is a registered trademark of VISICORP. Apple II is a registered trademark of Apple Computer, Inc.

1. HOW TO USE COMP: A COMPOUND GROWTH CALCULATOR

The basic concept in using all of the compound growth and annuity calculators is very simple. First, the given data is entered in the input column, and "@NA" is entered in the variable cell that is to be calculated. Recalculation is invoked by pressing !, and the results are computed and posted to the specified table. Follow the step-by-step procedure in Fig. 3-1. The corresponding screen is displayed in Table 3-3.

COMP: A COMPOUND GROWTH CALCULATOR

EXAMPLE OF INPUT AND OUTPUT PROCEDURES

INITIAL CONDITIONS:

(1) COMP loaded and ready to use.
(2) CURSOR at POST TO TABLE cell.
(3) CURSOR movement set for up and down.

PROBLEM DEFINITION: Compute the future value and post the results to TABLE 1 with the following input.

F = 12
N = 120
I = 16%
PV = -1000

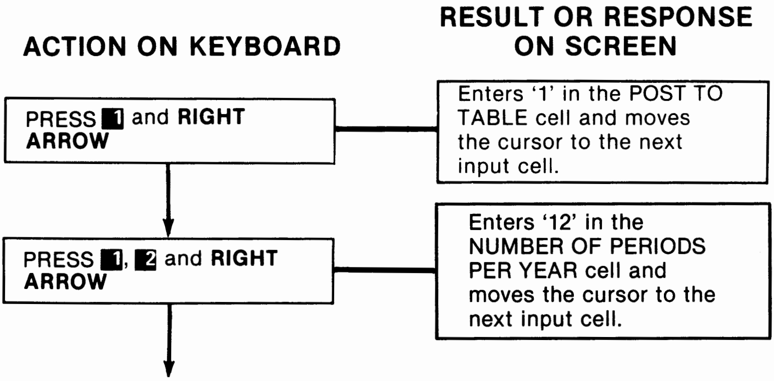
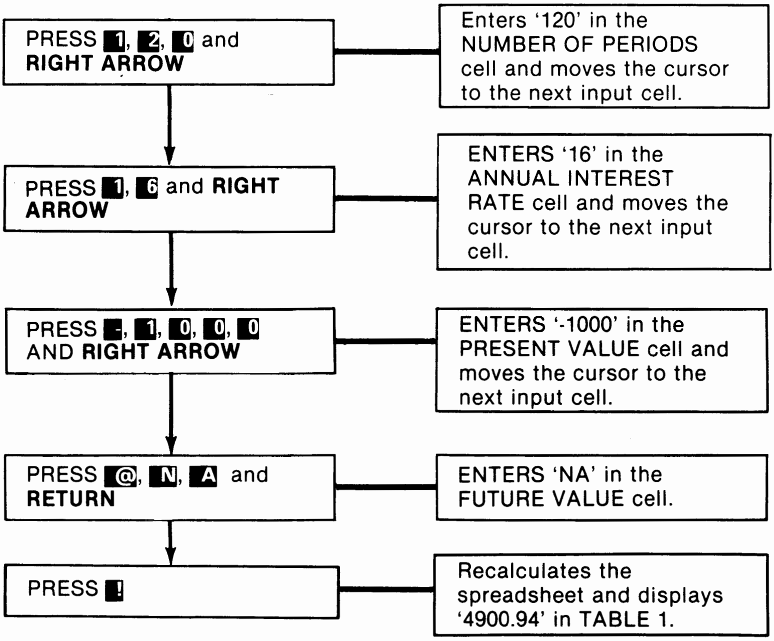

ACTION ON KEYBOARD
RESULT OR RESPONSE ON SCREEN
PRESS 1 and RIGHT ARROW
Enters '1' in the POST TO TABLE cell and moves the cursor to the next input cell.
PRESS 1, 2 and RIGHT ARROW
Enters '12' in the NUMBER OF PERIODS PER YEAR cell and moves the cursor to the next input cell.

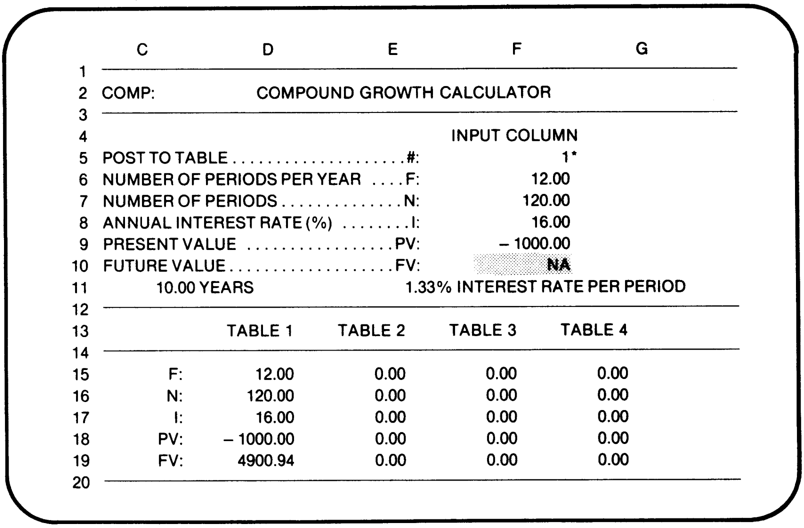
Fig. 3-1



ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS 1, 2, 0 and **RIGHT ARROW**	Enters '120' in the NUMBER OF PERIODS cell and moves the cursor to the next input cell.
PRESS 1, 6 and **RIGHT ARROW**	ENTERS '16' in the ANNUAL INTEREST RATE cell and moves the cursor to the next input cell.
PRESS -, 1, 0, 0, 0 AND **RIGHT ARROW**	ENTERS '-1000' in the PRESENT VALUE cell and moves the cursor to the next input cell.
PRESS @, N, A and **RETURN**	ENTERS 'NA' in the FUTURE VALUE cell.
PRESS !	Recalculates the spreadsheet and displays '4900.94' in TABLE 1.

NOTE: TO PRINT ANY PORTION OF THE WORKSHEET, SEE THE **AMORT** SECTION.

Fig. 3-1 — cont.



```
           C             D             E              F              G
 1  ------------------------------------------------------------------------
 2  COMP:               COMPOUND GROWTH CALCULATOR
 3  ------------------------------------------------------------------------
 4                                               INPUT COLUMN
 5  POST TO TABLE....................#:                    1*
 6  NUMBER OF PERIODS PER YEAR ....F:                 12.00
 7  NUMBER OF PERIODS..............N:                120.00
 8  ANNUAL INTEREST RATE (%) ........I:                16.00
 9  PRESENT VALUE .................PV:             - 1000.00
10  FUTURE VALUE...................FV:                    NA
11        10.00 YEARS                    1.33% INTEREST RATE PER PERIOD
12  ------------------------------------------------------------------------
13                  TABLE 1       TABLE 2       TABLE 3       TABLE 4
14  ------------------------------------------------------------------------
15          F:        12.00          0.00          0.00          0.00
16          N:       120.00          0.00          0.00          0.00
17          I:        16.00          0.00          0.00          0.00
18         PV:    - 1000.00          0.00          0.00          0.00
19         FV:      4900.94          0.00          0.00          0.00
20  ------------------------------------------------------------------------
```

Table 3-3

Helpful Hints on Using COMP

A. On each of the compound growth and annuity calculators, the calculated value in the input column is flagged by the symbol "NA." Attempting to compute more than one value in the input column will cause "NA" to generate through the worksheet. For accurate results, "@NA" should be entered for only one variable in the input column. Only one "NA" will appear in the input column to reflect this condition.

B. Standard accounting practices, regarding the sign conventions of cash flows, are observed on all compound growth and annuity calculators. If unreasonable answers are obtained, you may have entered a present value, a payment, or a future value with a sign inconsistent with your intentions. Assume the position of either the creditor or debtor, then consistently give the correct sign to each cash value. (Outflows are negative, inflows are positive.)

C. Should you accidentally destroy formulas on a calculator by writing over them, simply reload the calculator from your master diskette.

D. The tables in the calculators display zeros because of the zero (0) in the POST TO TABLE cell. If, at any time, you wish to set the tables back to zeros, move the cursor to the POST TO TABLE cell, input 0 and press the recalculation key, !.

2. HOW TO USE CCOMP: A CONTINUOUS COMPOUND GROWTH CALCULATOR

The basic concept in using all of the compound growth and annuity calculators is very simple. First, the given data is entered in the input column, and "@NA" is entered in the variable cell that is to be calculated. Recalculation is invoked by pressing !, and the results are computed and posted to the specified table. Follow the step-by-step procedure in Fig. 3-2. The corresponding screen is displayed in Table 3-4.

CCOMP: A CONTINUOUS COMPOUND GROWTH CALCULATOR

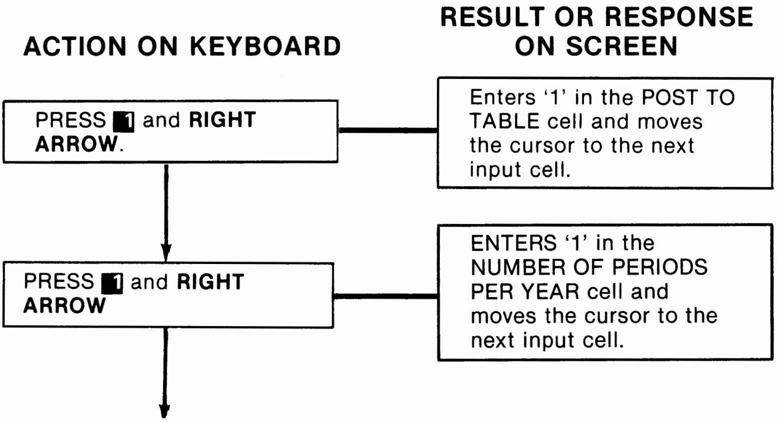
EXAMPLE OF INPUT AND OUTPUT PROCEDURES

INITIAL CONDITIONS:

(1) CCOMP loaded and ready to use.
(2) CURSOR at POST TO TABLE.
(3) CURSOR movement set for up and down.

PROBLEM DEFINITION: Compute the future value and post results to TABLE 1 with the following input.

F = 1
N = 10
I = 16
PV = – 1000



ACTION ON KEYBOARD

RESULT OR RESPONSE ON SCREEN

PRESS 1 and **RIGHT ARROW**.

Enters '1' in the POST TO TABLE cell and moves the cursor to the next input cell.

PRESS 1 and **RIGHT ARROW**

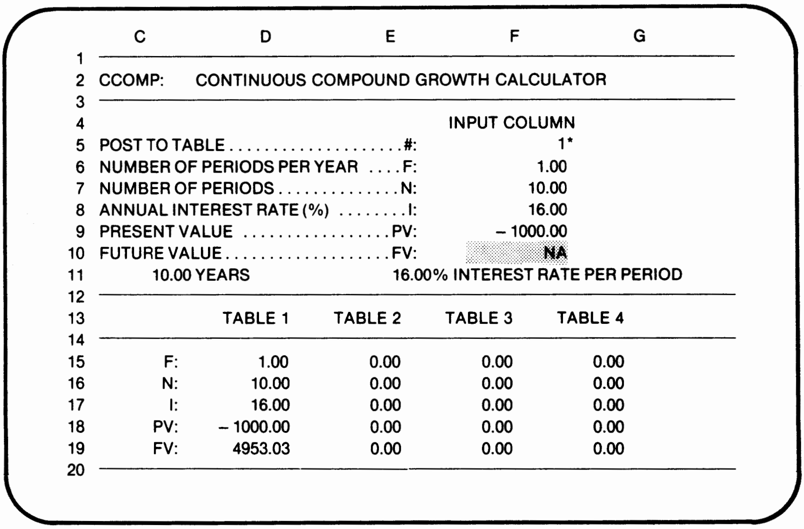
ENTERS '1' in the NUMBER OF PERIODS PER YEAR cell and moves the cursor to the next input cell.

Fig. 3-2

ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS 1, 0 and **RIGHT ARROW**	ENTERS '10' in the NUMBER OF PERIODS cell and moves the cursor to the next input cell.
PRESS 1, 6 and **RIGHT ARROW**	ENTERS '16' in the ANNUAL INTEREST RATE cell and moves the cursor to the next input cell.
PRESS -, 1, 0, 0, 0 and **RIGHT ARROW**	ENTERS '-1000' in the PRESENT VALUE cell and moves the cursor to the next input cell.
PRESS @, N, A and **RETURN**	ENTERS 'NA' in the FUTURE VALUE cell.
PRESS !	RECALCULATES the spreadsheet and displays '4953.03' in the FUTURE VALUE cell in TABLE 1.

NOTE: TO PRINT ANY PORTION OF THE WORKSHEET, SEE THE **AMORT** SECTION.

Fig. 3-2 — cont.



```
          C              D              E              F              G
 1  ------------------------------------------------------------------------
 2  CCOMP:     CONTINUOUS COMPOUND GROWTH CALCULATOR
 3  ------------------------------------------------------------------------
 4                                            INPUT COLUMN
 5  POST TO TABLE...................#:                  1*
 6  NUMBER OF PERIODS PER YEAR ....F:                1.00
 7  NUMBER OF PERIODS..............N:               10.00
 8  ANNUAL INTEREST RATE (%) ........I:             16.00
 9  PRESENT VALUE .................PV:          - 1000.00
10  FUTURE VALUE...................FV:                 NA
11        10.00 YEARS               16.00% INTEREST RATE PER PERIOD
12  ------------------------------------------------------------------------
13                   TABLE 1       TABLE 2       TABLE 3       TABLE 4
14  ------------------------------------------------------------------------
15           F:         1.00          0.00          0.00          0.00
16           N:        10.00          0.00          0.00          0.00
17           I:        16.00          0.00          0.00          0.00
18          PV:     - 1000.00         0.00          0.00          0.00
19          FV:      4953.03          0.00          0.00          0.00
20  ------------------------------------------------------------------------
```

Table 3-4

Helpful Hints on Using CCOMP

A. On each of the compound growth and annuity calculators, the calculated value in the input column is flagged by the symbol "NA." Attempting to compute more than one value in the input column will cause "NA" to generate through the worksheet. For accurate results, "@NA" should be entered for only one variable in the input column. Only one "NA" will appear in the input column to reflect this condition.

B. Standard accounting practices, regarding the sign conventions of cash flows, are observed on all compound growth and annuity calculators. If unreasonable answers are obtained, you may have entered a present value, a payment, or a future value with a sign inconsistent with your intentions. Assume the position of either the creditor or debtor, then consistently give the correct sign to each cash value. (Outflows are negative, inflows are positive.)

C. Should you accidentally destroy formulas on a calculator by writing over them, simply reload the calculator from your master diskette.

D. The tables in the calculators display zeros because of the zero (0) in the POST TO TABLE cell. If, at any time, you wish to set the tables back to zeros, move the cursor to the POST TO TABLE cell, input 0 and press the recalculation key, !.

3. HOW TO USE ORDANN: AN ORDINARY ANNUITY CALCULATOR

The basic concept in using all of the compound growth and annuity calculators is very simple. First, the given data is entered in the input column, and "@NA" is entered in the variable cell to be calculated. Recalculation is invoked by pressing !, and the results are computed and posted to the specified table. Follow the step-by-step procedure in Fig. 4-1. The corresponding screen is displayed in Table 4-1.

ORDANN: AN ORDINARY ANNUITY CALCULATOR

EXAMPLE OF INPUT AND OUTPUT PROCEDURES

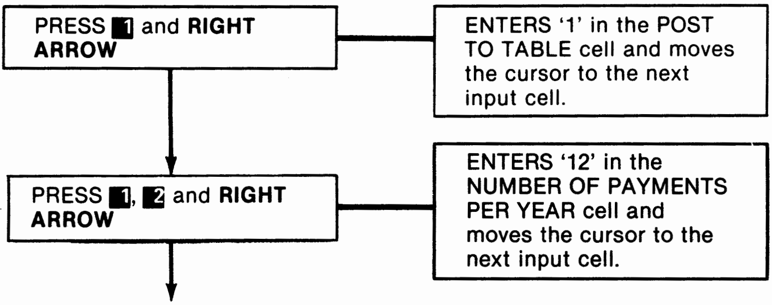
INITIAL CONDITIONS:

(1) ORDANN loaded and ready to use.
(2) CURSOR at POST TO TABLE cell.
(3) CURSOR movement set for up and down.

PROBLEM DEFINITION: Compute the payment amount and post results to TABLE 1 with the following input.

F = 12
N = 360
I = 16%
PV = 100,000
FV = 0

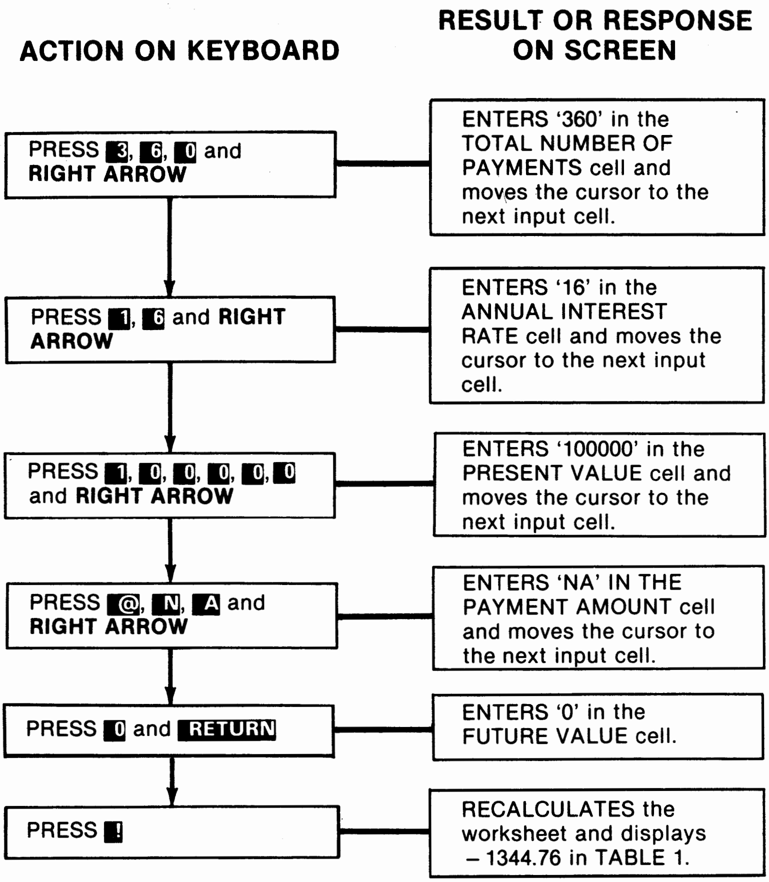
ACTION ON KEYBOARD — **RESULT OR RESPONSE ON SCREEN**



PRESS 1 and **RIGHT ARROW** — ENTERS '1' in the POST TO TABLE cell and moves the cursor to the next input cell.

PRESS 1, 2 and **RIGHT ARROW** — ENTERS '12' in the NUMBER OF PAYMENTS PER YEAR cell and moves the cursor to the next input cell.

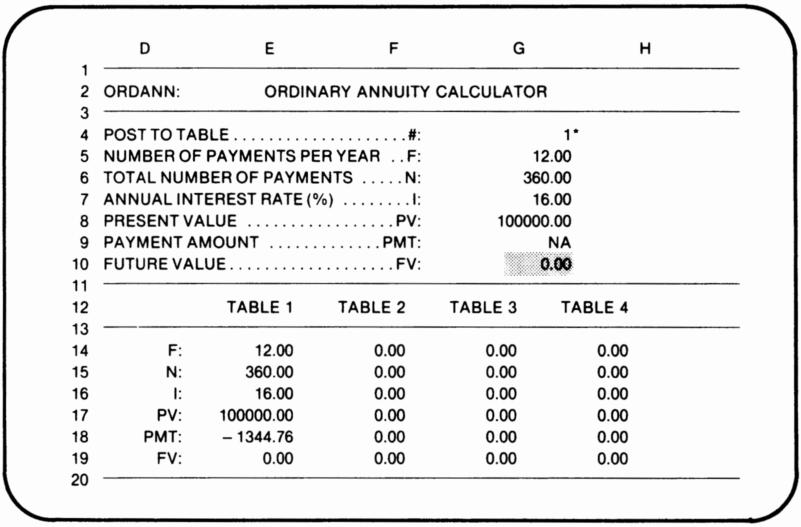
Fig. 4-1



ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS 3, 6, 0 and **RIGHT ARROW**	ENTERS '360' in the TOTAL NUMBER OF PAYMENTS cell and moves the cursor to the next input cell.
PRESS 1, 6 and **RIGHT ARROW**	ENTERS '16' in the ANNUAL INTEREST RATE cell and moves the cursor to the next input cell.
PRESS 1, 0, 0, 0, 0, 0 and **RIGHT ARROW**	ENTERS '100000' in the PRESENT VALUE cell and moves the cursor to the next input cell.
PRESS @, N, A and **RIGHT ARROW**	ENTERS 'NA' IN THE PAYMENT AMOUNT cell and moves the cursor to the next input cell.
PRESS 0 and RETURN	ENTERS '0' in the FUTURE VALUE cell.
PRESS !	RECALCULATES the worksheet and displays – 1344.76 in TABLE 1.

NOTE: TO PRINT ANY PORTION OF THE WORKSHEET, SEE THE **AMORT** SECTION.

Fig. 4-1 — cont.



```
        D             E              F              G              H
 1  ----------------------------------------------------------------------
 2  ORDANN:              ORDINARY ANNUITY CALCULATOR
 3  ----------------------------------------------------------------------
 4  POST TO TABLE......................#:                     1*
 5  NUMBER OF PAYMENTS PER YEAR  . . F:                    12.00
 6  TOTAL NUMBER OF PAYMENTS  . . . . . N:                   360.00
 7  ANNUAL INTEREST RATE (%)  . . . . . . . . I:              16.00
 8  PRESENT VALUE  . . . . . . . . . . . . . . . . . PV:         100000.00
 9  PAYMENT AMOUNT  . . . . . . . . . . . . . PMT:                NA
10  FUTURE VALUE. . . . . . . . . . . . . . . . . . . FV:               0.00
11  ----------------------------------------------------------------------
12                  TABLE 1       TABLE 2       TABLE 3       TABLE 4
13  ----------------------------------------------------------------------
14            F:       12.00          0.00          0.00          0.00
15            N:      360.00          0.00          0.00          0.00
16            I:       16.00          0.00          0.00          0.00
17           PV:   100000.00          0.00          0.00          0.00
18          PMT:    - 1344.76         0.00          0.00          0.00
19           FV:        0.00          0.00          0.00          0.00
20  ----------------------------------------------------------------------
```

Table 4-1

Helpful Hints on Using ORDANN

A. On each of the compound growth and annuity calculators, the calculated value in the input column is flagged by the symbol "NA." Attempting to compute more than one value in the input column will cause "NA" to generate through the worksheet. For accurate results, "@NA" should be entered for only one variable in the input column. Only one "NA" will appear in the input column to reflect this condition.

B. Standard accounting practices, regarding the sign conventions of cash flows, are observed on all compound growth and annuity calculators. If unreasonable answers are obtained, you may have entered a present value, a payment, or a future value with a sign inconsistent with your intentions. Assume the position of either the creditor or debtor, then consistently give the correct sign to each cash value. (Outflows are negative, inflows are positive.)

C. Should you accidentally destroy formulas on a calculator by writing over them, simply reload the calculator from your master diskette.

D. The tables in the calculators display zeros because of the zero (0) in the POST TO TABLE cell. If, at any time, you wish to set the tables back to zeros, move the cursor to the POST TO TABLE cell, input 0 and press the recalculation key, !.

4. HOW TO USE ANNDUE: AN ANNUITY DUE CALCULATOR

The basic concept in using all of the compound growth and annuity calculators is very simple. First, the given data is entered in the input column, and "@NA" is entered in the variable cell that is to be calculated. Recalculation is invoked by pressing **!**, and the results are computed and posted to the specified table. Follow the step-by-step procedure in Fig. 4-2. The corresponding screen is displayed in Table 4-2.

ANNDUE: AN ANNUITY DUE CALCULATOR

EXAMPLE OF INPUT AND OUTPUT PROCEDURES

INITIAL CONDITIONS

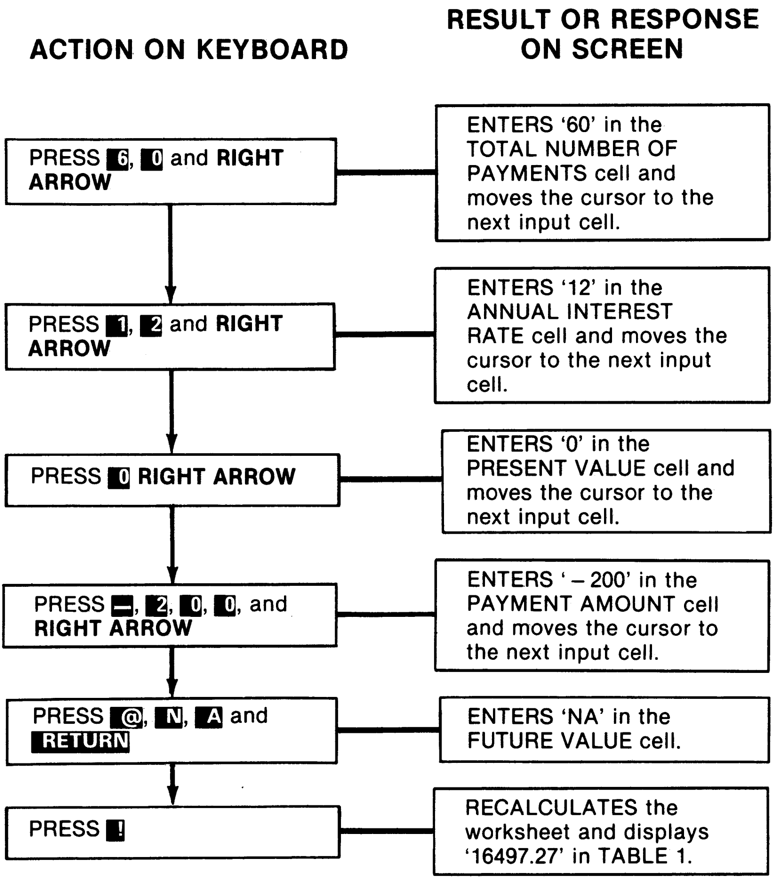
(1) ANNDUE loaded and ready to use.
(2) CURSOR at POST TO TABLE cell.
(3) CURSOR movement set for up and down

PROBLEM DEFINITION: Compute the future value and post the results to TABLE 1 with the following input.

F = 12
N = 60
I = 12
PV = 0
PMT = – 200

ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS **1** and **RIGHT ARROW**	ENTERS '1' in the POST TO TABLE cell and moves the cursor to the next input cell.
PRESS **1**, **2** and **RIGHT ARROW**	ENTERS '12' in the NUMBER OF PAYMENTS PER YEAR cell and moves the cursor to the next input cell.

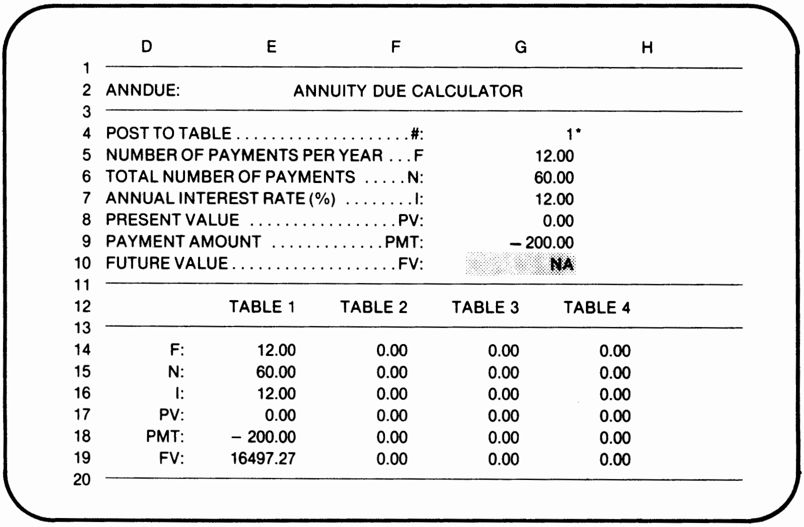
Fig. 4-2



ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS 6, 0 and **RIGHT ARROW**	ENTERS '60' in the TOTAL NUMBER OF PAYMENTS cell and moves the cursor to the next input cell.
PRESS 1, 2 and **RIGHT ARROW**	ENTERS '12' in the ANNUAL INTEREST RATE cell and moves the cursor to the next input cell.
PRESS 0 **RIGHT ARROW**	ENTERS '0' in the PRESENT VALUE cell and moves the cursor to the next input cell.
PRESS –, 2, 0, 0, and **RIGHT ARROW**	ENTERS '– 200' in the PAYMENT AMOUNT cell and moves the cursor to the next input cell.
PRESS @, N, A and **RETURN**	ENTERS 'NA' in the FUTURE VALUE cell.
PRESS !	RECALCULATES the worksheet and displays '16497.27' in TABLE 1.

NOTE: TO PRINT ANY PORTION OF THE WORKSHEET, SEE THE **AMORT** SECTION.

Fig. 4-2 — cont.



```
        D              E              F              G              H
 1  ------------------------------------------------------------------------
 2  ANNDUE:                ANNUITY DUE CALCULATOR
 3  ------------------------------------------------------------------------
 4  POST TO TABLE....................#:                      1*
 5  NUMBER OF PAYMENTS PER YEAR ...F                     12.00
 6  TOTAL NUMBER OF PAYMENTS .....N:                     60.00
 7  ANNUAL INTEREST RATE (%) ........I:                  12.00
 8  PRESENT VALUE .................PV:                    0.00
 9  PAYMENT AMOUNT .............PMT:                  -200.00
10  FUTURE VALUE...................FV:                      NA
11  ------------------------------------------------------------------------
12                    TABLE 1       TABLE 2       TABLE 3       TABLE 4
13  ------------------------------------------------------------------------
14            F:        12.00          0.00          0.00          0.00
15            N:        60.00          0.00          0.00          0.00
16            I:        12.00          0.00          0.00          0.00
17           PV:         0.00          0.00          0.00          0.00
18          PMT:      - 200.00         0.00          0.00          0.00
19           FV:     16497.27          0.00          0.00          0.00
20  ------------------------------------------------------------------------
```

Table 4-2

Helpful Hints on Using ANNDUE

A. On each of the compound growth and annuity calculators, the calculated value in the input column is flagged by the symbol "NA." Attempting to compute more than one value in the input column will cause "NA" to generate through the worksheet. For accurate results, "@NA" should be entered for only one variable in the input column. Only one "NA" will appear in the input column to reflect this condition.

B. Standard accounting practices, regarding the sign of cash flows, are observed on all compound growth and annuity calculators. If unreasonable answers are obtained, you may have entered a present value, a payment, or a future value with a sign inconsistent with your intentions. Assume the position of either the creditor or debtor, then consistently give the correct sign to each cash value. (Outflows are negative, inflows are positive.)

C. Should you accidentally destroy formulas on a calculator by writing over them, simply reload the calculator from your master diskette.

D. The tables in the calculators display zeros because of the zero (0) in the POST TO TABLE cell. If, at any time, you wish to set the tables back to zeros, move the cursor to the POST TO TABLE cell, input 0 and press the recalculation key, !.

5. HOW TO USE CANN: A CONTINUOUS ANNUITY CALCULATOR

The basic concept in using all of the compound growth and annuity calculators is very simple. First, the given data is entered in the input column, and "@NA" is entered in the variable cell that is to be calculated. Recalculation is invoked by pressing !, and the results are computed and posted to the specified table. Follow the step-by-step procedure in Fig. 4-3. The corresponding screen is displayed in Table 4-3.

CANN: A CONTINUOUS ANNUITY CALCULATOR

EXAMPLE OF INPUT AND OUTPUT PROCEDURES

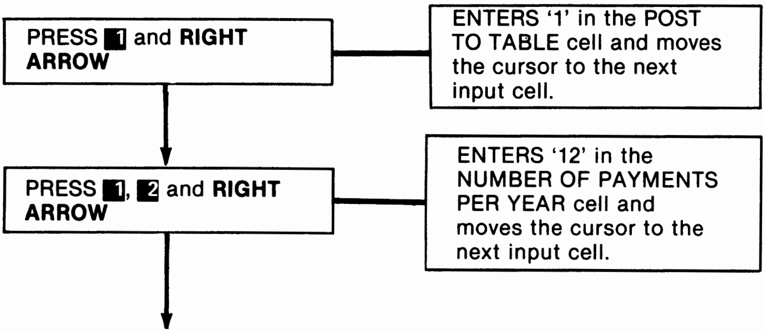
INITIAL CONDITIONS:

(1) CANN loaded and ready to use.
(2) CURSOR set at POST TO TABLE cell.
(3) CURSOR movement set for up and down.

PROBLEM DEFINITION: Compute the future value and post the results to TABLE 1 with the following input.

F = 12
N = 12
I = 16
PV = 0
PMT = – 5000

ACTION ON KEYBOARD | **RESULT OR RESPONSE ON SCREEN**



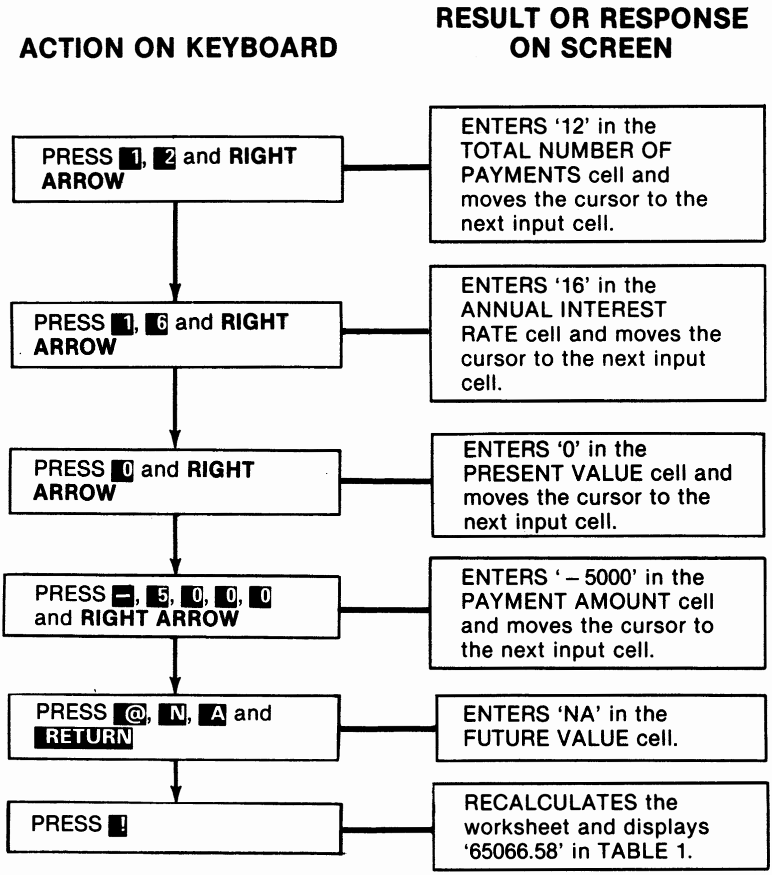
PRESS 1 and **RIGHT ARROW**

ENTERS '1' in the POST TO TABLE cell and moves the cursor to the next input cell.

PRESS 1, 2 and **RIGHT ARROW**

ENTERS '12' in the NUMBER OF PAYMENTS PER YEAR cell and moves the cursor to the next input cell.

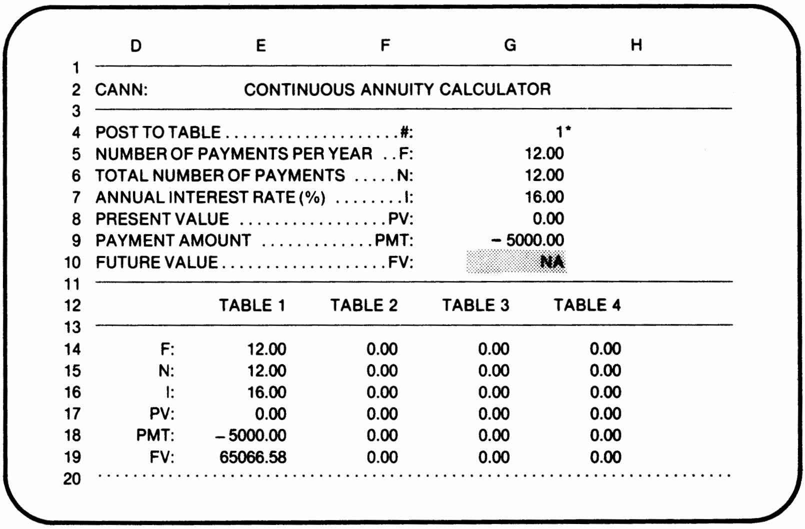
Fig. 4-3



ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS 1, 2 and **RIGHT ARROW**	ENTERS '12' in the TOTAL NUMBER OF PAYMENTS cell and moves the cursor to the next input cell.
PRESS 1, 6 and **RIGHT ARROW**	ENTERS '16' in the ANNUAL INTEREST RATE cell and moves the cursor to the next input cell.
PRESS 0 and **RIGHT ARROW**	ENTERS '0' in the PRESENT VALUE cell and moves the cursor to the next input cell.
PRESS –, 5, 0, 0, 0 and **RIGHT ARROW**	ENTERS '–5000' in the PAYMENT AMOUNT cell and moves the cursor to the next input cell.
PRESS @, N, A and RETURN	ENTERS 'NA' in the FUTURE VALUE cell.
PRESS !	RECALCULATES the worksheet and displays '65066.58' in TABLE 1.

NOTE: TO PRINT ANY PORTION OF THE WORKSHEET, SEE THE **AMORT** SECTION.

Fig. 4-3 — cont.



```
          D              E              F              G              H
 1  -----------------------------------------------------------------------
 2  CANN:            CONTINUOUS ANNUITY CALCULATOR
 3  -----------------------------------------------------------------------
 4  POST TO TABLE ....................#:                     1*
 5  NUMBER OF PAYMENTS PER YEAR ..F:                    12.00
 6  TOTAL NUMBER OF PAYMENTS .....N:                    12.00
 7  ANNUAL INTEREST RATE (%) ........I:                 16.00
 8  PRESENT VALUE .................PV:                   0.00
 9  PAYMENT AMOUNT .............PMT:               - 5000.00
10  FUTURE VALUE ...................FV:                    NA
11  -----------------------------------------------------------------------
12                   TABLE 1        TABLE 2        TABLE 3        TABLE 4
13  -----------------------------------------------------------------------
14            F:       12.00           0.00           0.00           0.00
15            N:       12.00           0.00           0.00           0.00
16            I:       16.00           0.00           0.00           0.00
17           PV:        0.00           0.00           0.00           0.00
18          PMT:    -5000.00           0.00           0.00           0.00
19           FV:    65066.58           0.00           0.00           0.00
20  .......................................................................
```

Table 4-3

Helpful Hints on Using CANN

A. On each of the compound growth and annuity calculators, the calculated value in the input column is flagged by the symbol "NA." Attempting to compute more than one value in the input column will cause "NA" to generate through the worksheet. For accurate results, "@NA" should be entered for only one variable in the input column. Only one "NA" will appear in the input column to reflect this condition.

B. Standard accounting practices, with regard to the sign of cash flows, are observed on all compound growth and annuity calculators. If unreasonable answers are obtained, you may have entered a present value, a payment, or a future value with a sign inconsistent with your intentions. Assume the position of either the creditor or debtor, then consistently give the correct sign to each cash value. (Outflows are negative, inflows are positive.)

C. Should you accidentally destroy formulas on a calculator by writing over them, simply reload the calculator from your master diskette.

D. The table in the calculators display zeros because of the zero (0) in the POST TO TABLE cell. If, at any time, you wish to set the tables back to zeros, move the cursor to the POST TO TABLE cell, input 0 and press the recalculation key, !.

6. HOW TO USE AMORT

A sample problem in using AMORT is illustrated in the walkthrough in Fig. 4-4. After completing the last step (pressing !), the computation requires a short time for completion. During computation, the cursor disappears and an exclamation point is displayed in the upper right-hand corner of the screen. Table 4-4 shows a typical input screen.

AMORT: AMORTIZATION CALCULATOR

EXAMPLE OF INPUT AND OUTPUT PROCEDURES

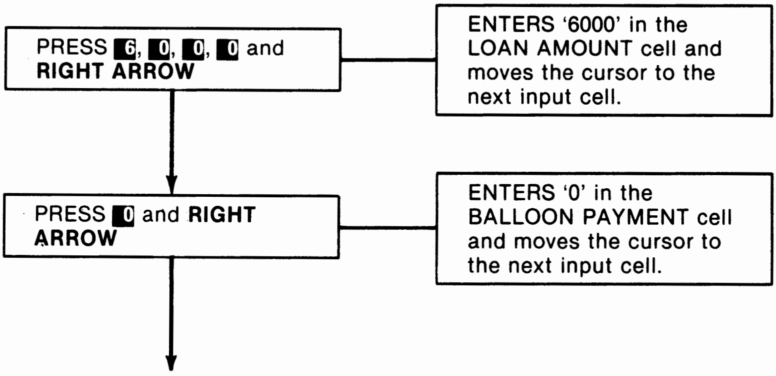
INITIAL CONDITIONS:

(1) AMORT loaded and ready to use.
(2) CURSOR set at LOAN AMOUNT cell.
(3) CURSOR movement set for up and down.

PROBLEM DEFINITION: Generate an amortization schedule with the following input.

LOAN AMOUNT ....:	6000
BALLOON PAYMENT ....:	0
ANNUAL INTEREST RATE ....:	16
TERM OF LOAN ....:	60
BEGINNING DATE OF LOAN ....:	June 1981
BEGINNING DATE OF SCHEDULE ......:	January 1983

ACTION ON KEYBOARD | **RESULT OR RESPONSE ON SCREEN**



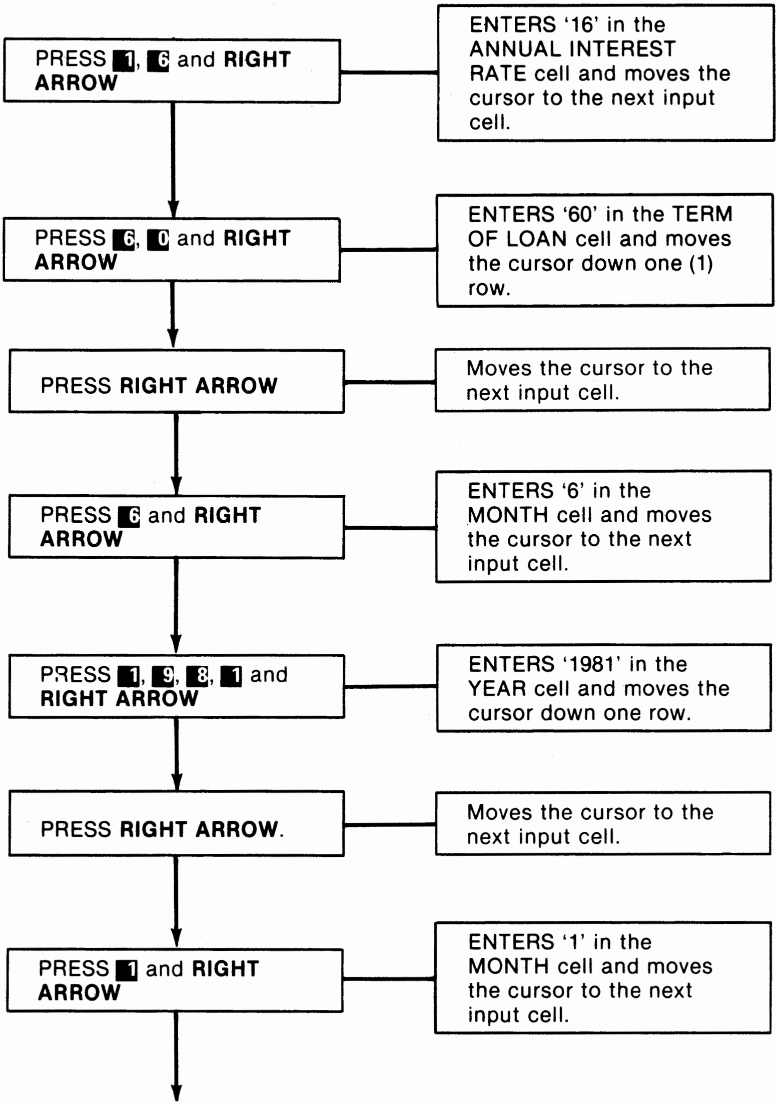
PRESS 6, 0, 0, 0 and **RIGHT ARROW**

ENTERS '6000' in the LOAN AMOUNT cell and moves the cursor to the next input cell.

PRESS 0 and **RIGHT ARROW**

ENTERS '0' in the BALLOON PAYMENT cell and moves the cursor to the next input cell.

Fig. 4-4



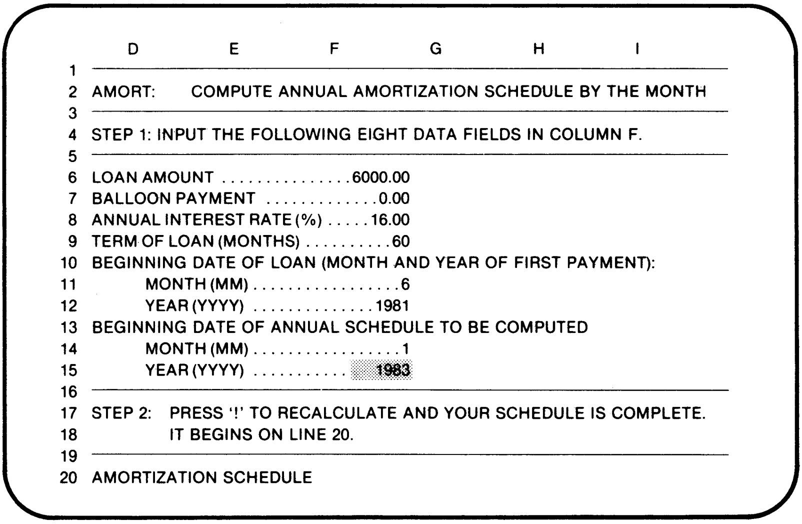
ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS 1, 6 and **RIGHT ARROW**	ENTERS '16' in the ANNUAL INTEREST RATE cell and moves the cursor to the next input cell.
PRESS 6, 0 and **RIGHT ARROW**	ENTERS '60' in the TERM OF LOAN cell and moves the cursor down one (1) row.
PRESS **RIGHT ARROW**	Moves the cursor to the next input cell.
PRESS 6 and **RIGHT ARROW**	ENTERS '6' in the MONTH cell and moves the cursor to the next input cell.
PRESS 1, 9, 8, 1 and **RIGHT ARROW**	ENTERS '1981' in the YEAR cell and moves the cursor down one row.
PRESS **RIGHT ARROW**.	Moves the cursor to the next input cell.
PRESS 1 and **RIGHT ARROW**	ENTERS '1' in the MONTH cell and moves the cursor to the next input cell.

Fig. 4-4 — cont.

ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS 1, 9, 8, 3 and RETURN	ENTERS '1983' in the Year cell.
PRESS !	RECALCULATES the worksheet.

NOTE: TO VIEW THE OUTPUT, SCROLL THE SCREEN DOWN AND TO THE RIGHT.

Fig. 4-4 — cont.



```
          D          E          F          G          H          I
 1 ------------------------------------------------------------------
 2 AMORT:     COMPUTE ANNUAL AMORTIZATION SCHEDULE BY THE MONTH
 3 ------------------------------------------------------------------
 4 STEP 1: INPUT THE FOLLOWING EIGHT DATA FIELDS IN COLUMN F.
 5 ------------------------------------------------------------------
 6 LOAN AMOUNT ...............6000.00
 7 BALLOON PAYMENT .............0.00
 8 ANNUAL INTEREST RATE (%) .....16.00
 9 TERM OF LOAN (MONTHS) ..........60
10 BEGINNING DATE OF LOAN (MONTH AND YEAR OF FIRST PAYMENT):
11       MONTH (MM) .................6
12       YEAR (YYYY) ..............1981
13 BEGINNING DATE OF ANNUAL SCHEDULE TO BE COMPUTED
14       MONTH (MM) .................1
15       YEAR (YYYY) ...........   1983
16 ------------------------------------------------------------------
17 STEP 2:   PRESS '!' TO RECALCULATE AND YOUR SCHEDULE IS COMPLETE.
18           IT BEGINS ON LINE 20.
19 ------------------------------------------------------------------
20 AMORTIZATION SCHEDULE
```

Table 4-4

Printing Out Your Amortization Schedule

As soon as the worksheet has been calculated, print the results from rows 20 through 46 between columns D and I. In order to print the schedule, you will need a printer connected to the Apple computer. The printer should be at least 80 columns wide. Due to the use of different rounding techniques, the values displayed may vary a few cents from published amortization schedules because of accumulated rounding errors. Proceed as follows.

1. To enter a title:

Press: >, F, 2, 1.

Type in your title. For example,

Press: B. O, A, T, L, O, A, N and RETURN.

2. Position the cursor at cell D20, the "begin-print" position. Press :, /, P, and P.

3. The screen should display:

Print: Lower right, "Setup,-,&.

Press: I, 4, 6, and RETURN.

This is the "end-print" position; i.e., cell I46 is the lowest and rightmost cell to be printed. The rectangle defined by these two cells will be sent to the printer. (Note, the two cells list the rows 20 and 46, and the columns D and I as previously noted.)

After a few short moments, your printer should begin printing the amortization table. Compare your printout to the one displayed in Table 4-5.

```
AMORTIZATION SCHEDULE
ANNUAL SUMMARY FOR . . . BOAT LOAN
LOAN AMOUNT . . . . . . . . . . .      6000.00
BALLOON PAYMENT . . . . . .               0.00
ANNUAL INTEREST RATE . .               16.00%            1.33%  PER MONTH
TERM OF LOAN . . . . . . . . . . .       5 YRS               0  MONTHS
BEGINNING BALANCE. . . . .          4585.54                  19  PMTS MADE

YEAR   MONTH      PAYMENT     PRINCIPLE     INTEREST    END BALANCE
1983       1       145.91         84.77        61.14        4500.68
  83       2       145.91         85.90        60.01        4414.78
  83       3       145.91         87.05        58.86        4327.73
  83       4       145.91         88.21        57.70        4239.53
  83       5       145.91         89.38        56.53        4150.14
  83       6       145.91         90.57        55.34        4059.57
  83       7       145.91         91.78        54.13        3967.79
  83       8       145.91         93.01        52.90        3874.78
  83       9       145.91         94.25        51.66        3780.53
  83      10       145.91         95.50        50.41        3685.03
  83      11       145.91         96.78        49.13        3588.25
  83      12       145.91         98.07        47.84        3490.19

ANNUAL TOTAL . . . . . . . 1750.92      1095.26       655.66
TOTAL TO DATE . . . . . . . 4523.21      2509.81      2013.40
```

Helpful Hints on Using AMORT

A. Should you accidentally destroy formulas on a calculator by writing over them, simply reload the calculator from your master diskette.

7. HOW TO USE NPV

A column of cash flow values and a discount rate are the input for this worksheet. A single value is the output: the net present value of the cash flow entered, discounted at the given rate. If the cash flow values are entered as yearly amounts, then the discount rate is an annual rate. If they are monthly amounts, the discount rate is a monthly rate; i.e., the annual rate divided by 12. A similar convention is used for quarter or semi-annual periods.

Standard accounting conventions, with regard to the sign of cash flow values, are observed in entering the cash flow values. (Cash outflows are negative, cash inflows are positive.) The flow diagram in Fig. 5-1 walks you through a typical problem using NPV. Table 5-1 displays what your screen should look like after you have completed this problem.

NPV: A NET PRESENT VALUE CALCULATOR

EXAMPLE OF INPUT AND OUTPUT PROCEDURES

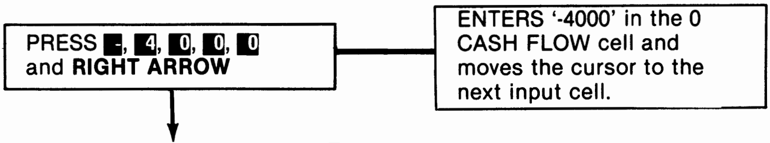
INITIAL CONDITIONS:

(1) NPV loaded and ready to use.
(2) CURSOR set at 0 CASH FLOW cell.
(3) CURSOR movement set for up and down.

PROBLEM DEFINITION: Compute the net present value of the following cash flow discounted at 18%.

INVESTMENT	$4000
PERIOD 1	$1000
PERIOD 2	$2000
PERIOD 3	$3000

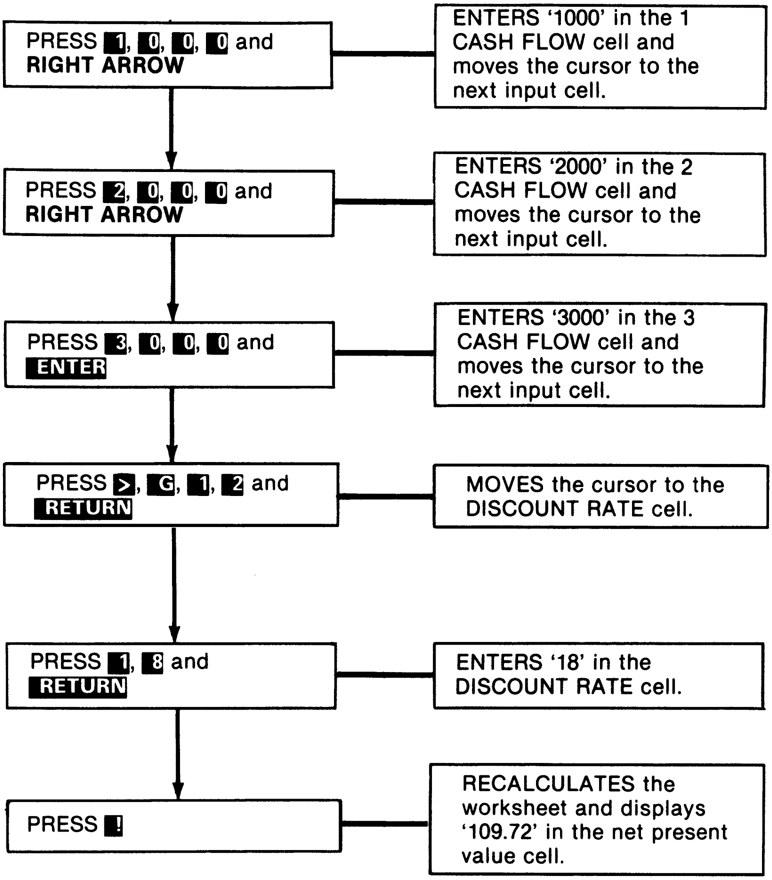
ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN



PRESS -, 4, 0, 0, 0 and **RIGHT ARROW**

ENTERS '-4000' in the 0 CASH FLOW cell and moves the cursor to the next input cell.

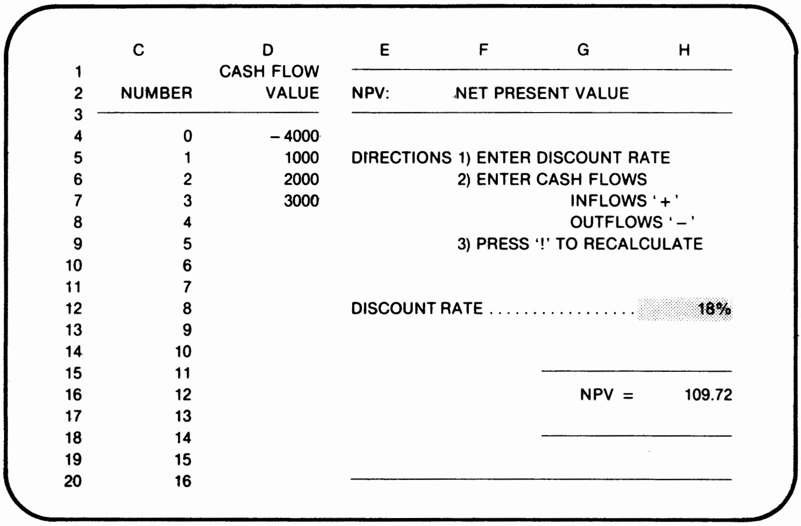
Fig. 5-1



ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS 1, 0, 0, 0 and **RIGHT ARROW**	ENTERS '1000' in the 1 CASH FLOW cell and moves the cursor to the next input cell.
PRESS 2, 0, 0, 0 and **RIGHT ARROW**	ENTERS '2000' in the 2 CASH FLOW cell and moves the cursor to the next input cell.
PRESS 3, 0, 0, 0 and ENTER	ENTERS '3000' in the 3 CASH FLOW cell and moves the cursor to the next input cell.
PRESS >, G, 1, 2 and RETURN	MOVES the cursor to the DISCOUNT RATE cell.
PRESS 1, 8 and RETURN	ENTERS '18' in the DISCOUNT RATE cell.
PRESS !	RECALCULATES the worksheet and displays '109.72' in the net present value cell.

NOTE: TO PRINT ANY PORTION OF THE WORKSHEET, SEE **AMORT** SECTION.

Fig. 5-1 — cont.



```
          C           D         E         F          G          H
 1               CASH FLOW   ______________________________________
 2    NUMBER         VALUE   NPV:      NET PRESENT VALUE
 3   ____________________   ______________________________________
 4         0         -4000
 5         1          1000   DIRECTIONS 1) ENTER DISCOUNT RATE
 6         2          2000              2) ENTER CASH FLOWS
 7         3          3000                         INFLOWS '+'
 8         4                                       OUTFLOWS '-'
 9         5                            3) PRESS '!' TO RECALCULATE
10         6
11         7
12         8                 DISCOUNT RATE ................     18%
13         9
14        10
15        11                                   ___________________
16        12                                     NPV =      109.72
17        13
18        14                                   ___________________
19        15
20        16                 ______________________________________
```

Table 5-1

Helpful Hints on Using NPV

A. Sometimes it is necessary to clear the input column, for example, when fewer values are to be entered than already are in the column. Fig. 5-2 illustrates how this is done.

B. Should you accidentally destroy formulas on a calculator by writing over them, simply reload the calculator from your master diskette.

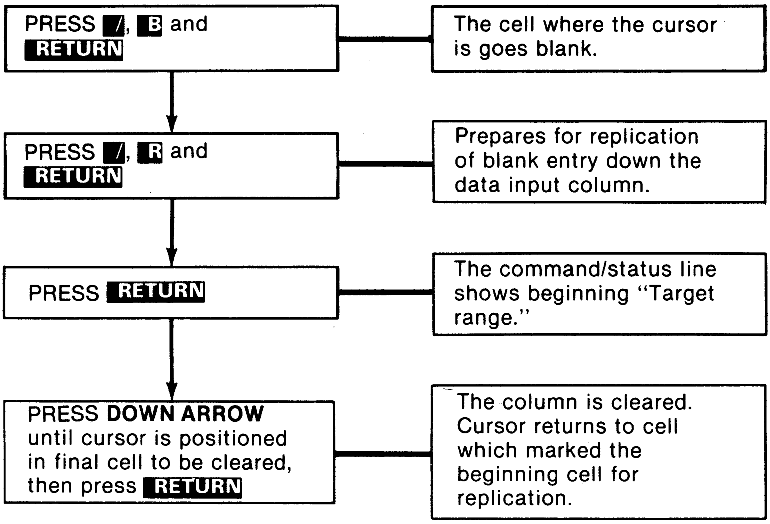
C. You may wish to print this particular worksheet so you have a hardcopy for your records. Detailed instructions on printing procedures are given in the **AMORT** Section, which discusses how to print amortization schedules. The only difference will be the begin-print and end-print coordinates (cells) entered.

CLEARING A COLUMN IN VISICALC

INITIAL CONDITIONS:

(1) One of the calculators loaded and ready to use.
(2) Cursor located at the top of the column to be cleared.

PROBLEM DEFINITION: Clear an input column of existing entries with the blank and replicate commands.



ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS /, B and RETURN	The cell where the cursor is goes blank.
PRESS /, R and RETURN	Prepares for replication of blank entry down the data input column.
PRESS RETURN	The command/status line shows beginning "Target range."
PRESS **DOWN ARROW** until cursor is positioned in final cell to be cleared, then press RETURN	The column is cleared. Cursor returns to cell which marked the beginning cell for replication.

Fig. 5-2

8. HOW TO USE IRR: INTERNAL RATE OF RETURN

For this calculator, a column of cash flow values is the input. A single value is the output: the internal rate of return. If the cash flow values are entered as yearly amounts, the IRR is an annual rate. If they are monthly amounts, the IRR is a monthly rate; i.e., the annual rate divided by 12. A similar convention is used for quarter or semi-annual periods.

Standard accounting practices, with regard to the sign of cash values, are observed in entering the cash flow values. (Cash outflows are negative and cash inflows are positive.) The flow diagram in Fig. 5-3 walks you through a typical problem using IRR. Table 5-2 displays what your screen should look like after you have completed this problem.

IRR: AN INTERNAL RATE OF RETURN CALCULATOR

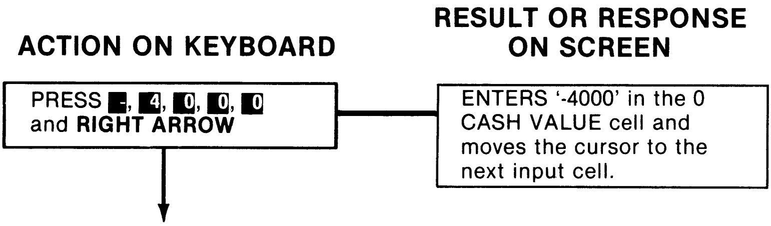
EXAMPLE OF INPUT AND OUTPUT PROCEDURES

INITIAL CONDITIONS:

(1) IRR loaded and ready to use.
(2) CURSOR set at the 0 CASH VALUE cell.
(3) CURSOR movement set for up and down.
(4) CASH VALUE column cleared for input.

PROBLEM DEFINITION: Compute the internal rate of return of the following cash flow.

INVESTMENT	$4000
PERIOD 1	$1000
PERIOD 2	$2000
PERIOD 3	$3000



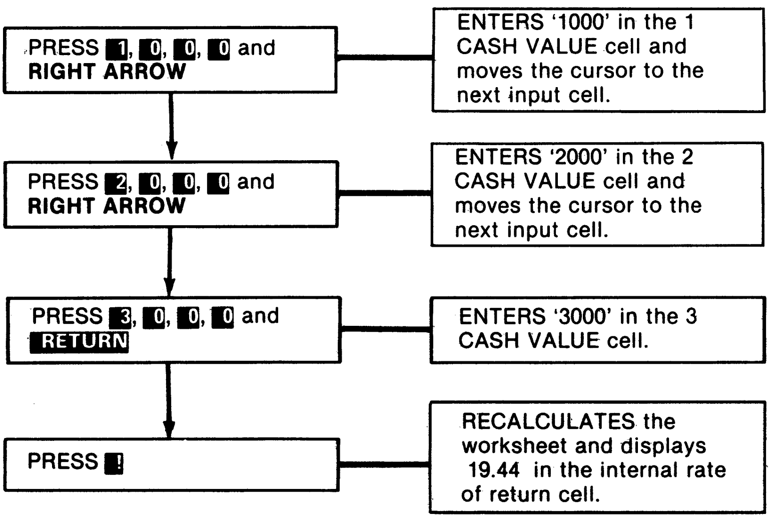
ACTION ON KEYBOARD

RESULT OR RESPONSE ON SCREEN

PRESS -, 4, 0, 0, 0 and **RIGHT ARROW**

ENTERS '-4000' in the 0 CASH VALUE cell and moves the cursor to the next input cell.

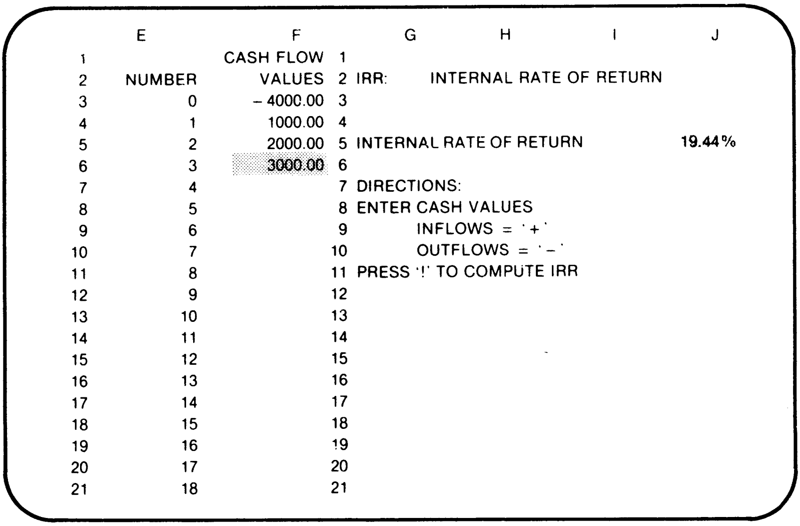
Fig. 5-3



ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS 1, 0, 0, 0 and **RIGHT ARROW**	ENTERS '1000' in the 1 CASH VALUE cell and moves the cursor to the next input cell.
PRESS 2, 0, 0, 0 and **RIGHT ARROW**	ENTERS '2000' in the 2 CASH VALUE cell and moves the cursor to the next input cell.
PRESS 3, 0, 0, 0 and RETURN	ENTERS '3000' in the 3 CASH VALUE cell.
PRESS !	RECALCULATES the worksheet and displays 19.44 in the internal rate of return cell.

NOTE: TO PRINT ANY PART OF THE WORKSHEET, SEE **AMORT** SECTION.

Fig. 5-3



```
            E             F          G           H              I           J
 1                CASH FLOW   1
 2     NUMBER        VALUES   2 IRR:       INTERNAL RATE OF RETURN
 3          0      - 4000.00  3
 4          1        1000.00  4
 5          2        2000.00  5 INTERNAL RATE OF RETURN                   19.44%
 6          3        3000.00  6
 7          4                 7 DIRECTIONS:
 8          5                 8 ENTER CASH VALUES
 9          6                 9        INFLOWS = '+'
10          7                10        OUTFLOWS = '-'
11          8                11 PRESS '!' TO COMPUTE IRR
12          9                12
13         10                13
14         11                14
15         12                15
16         13                16
17         14                17
18         15                18
19         16                19
20         17                20
21         18                21
```

Table 5-2

Helpful Hints on Using IRR

A. It is necessary to clear the input column sometimes, for example, when fewer values are to be entered than already are in the column. Fig. 5-4 illustrates how this is done.

B. Should you accidentally destroy formulas on a calculator by writing over them, simply reload the calculator from your master diskette.

C. You may wish to print this particular worksheet so you have a hardcopy for your records. Detailed instructions on printing procedures are given in the **AMORT** Section, which discusses how to print amortization schedules. Only the references to the begin- and end-print cells will change.

CLEARING A COLUMN IN VISICALC

INITIAL CONDITIONS:

(1) One of the calculators loaded and ready to use.
(2) Cursor located at the top of the column to be cleared.

PROBLEM DEFINITION: Clear an input column of existing entries with the blank and replicate commands.

ACTION ON KEYBOARD	**RESULT OR RESPONSE ON SCREEN**
PRESS /, B and RETURN	The cell where the cursor is goes blank.
PRESS /, R and RETURN	Prepares for replication of blank entry down the data input column.
PRESS RETURN	The command/status line shows beginning "Target range."
PRESS **DOWN ARROW** until cursor is positioned in final cell to be cleared, then press RETURN	The column is cleared. Cursor returns to cell which marked the beginning cell for replication.

Fig. 5-4

9. HOW TO USE FMRR: FINANCIAL MANAGEMENT RATE OF RETURN

The input for this calculator is a column of cash flow values, a reinvestment rate, a discount rate, and the number of periods over which the investment is made. The output is a single value, the financial management rate of return of the cash flow. If the cash flow values are given as yearly amounts, then all rates are annual rates. If the cash flow values are monthly amounts, then the rates are monthly rates, i.e., the annual rate divided by 12. A similar convention is used if the period is, say, quarterly or semi-annual.

Standard accounting conventions, with regard to the sign of cash values, are observed in entering the cash flow values. (Cash outflows are negative, cash inflows are positive.) The flow diagram in Fig. 5-5 walks you through a typical problem using FMRR. Table 5-3 displays what your screen should look like after you have completed this problem.

FMRR: FINANCIAL MANAGEMENT RATE OF RETURN CALCULATOR

EXAMPLE OF INPUT AND OUTPUT PROCEDURES

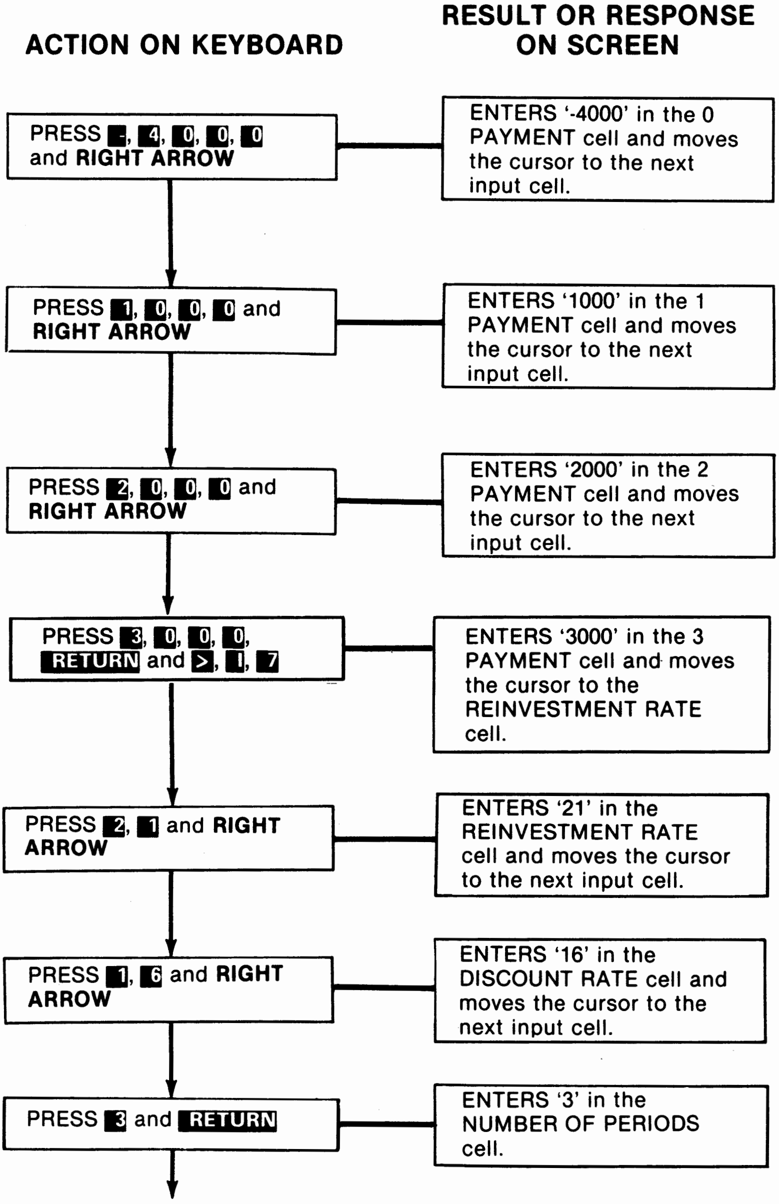
INITIAL CONDITIONS:

(1) FMRR loaded and ready to use.
(2) CURSOR at the 0 PAYMENT cell.
(3) CURSOR movement set for up and down.
(4) PAYMENT column cleared for input.

PROBLEM DEFINITION: Compute the financial management rate of return of the following cash flow. Use a discount rate of 16%, a reinvestment rate of 21%, and a period of three (3) years.

INVESTMENT	$4000
PERIOD 1	$1000
PERIOD 2	$2000
PERIOD 3	$3000

Fig. 5-5



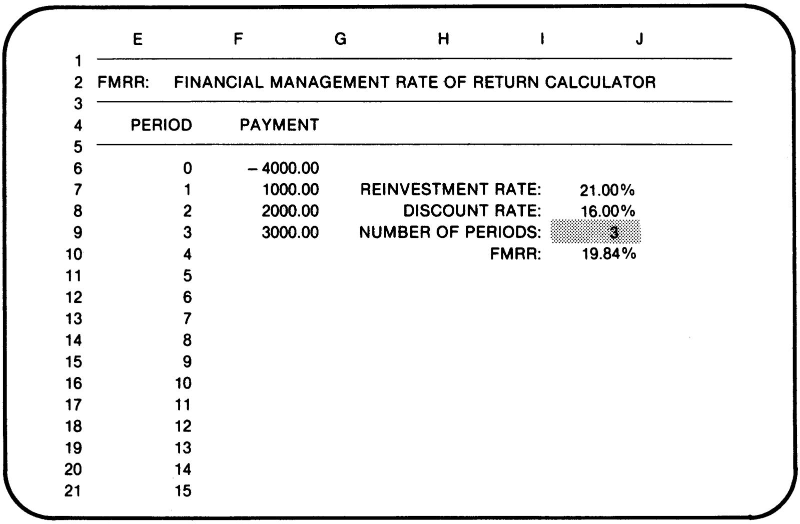
ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS -, 4, 0, 0, 0 and **RIGHT ARROW**	ENTERS '-4000' in the 0 PAYMENT cell and moves the cursor to the next input cell.
PRESS 1, 0, 0, 0 and **RIGHT ARROW**	ENTERS '1000' in the 1 PAYMENT cell and moves the cursor to the next input cell.
PRESS 2, 0, 0, 0 and **RIGHT ARROW**	ENTERS '2000' in the 2 PAYMENT cell and moves the cursor to the next input cell.
PRESS 3, 0, 0, 0, RETURN and >, I, 7	ENTERS '3000' in the 3 PAYMENT cell and moves the cursor to the REINVESTMENT RATE cell.
PRESS 2, 1 and **RIGHT ARROW**	ENTERS '21' in the REINVESTMENT RATE cell and moves the cursor to the next input cell.
PRESS 1, 6 and **RIGHT ARROW**	ENTERS '16' in the DISCOUNT RATE cell and moves the cursor to the next input cell.
PRESS 3 and RETURN	ENTERS '3' in the NUMBER OF PERIODS cell.

Fig. 5-5 — cont.

ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS !	RECALCULATES the worksheet and displays '19.84' in the FINANCIAL MANAGEMENT RATE OF RETURN cell.

NOTE: TO PRINT ANY PORTION OF THE WORKSHEET, SEE **AMORT** SECTION.

Fig. 5-5 — cont.



```
         E          F           G          H          I          J
  1  ---------------------------------------------------------------
  2  FMRR:   FINANCIAL MANAGEMENT RATE OF RETURN CALCULATOR
  3  ---------------------------------------------------------------
  4     PERIOD       PAYMENT
  5  ---------------------------------------------------------------
  6          0      -4000.00
  7          1       1000.00      REINVESTMENT RATE:     21.00%
  8          2       2000.00          DISCOUNT RATE:     16.00%
  9          3       3000.00      NUMBER OF PERIODS:          3
 10          4                                 FMRR:     19.84%
 11          5
 12          6
 13          7
 14          8
 15          9
 16         10
 17         11
 18         12
 19         13
 20         14
 21         15
```

Table 5-3

Helpful Hints on Using FMRR

A. It is necessary to clear the input column sometimes, for example, when fewer values are to be entered than are already in the column. Fig. 5-6 illustrates how this is done.

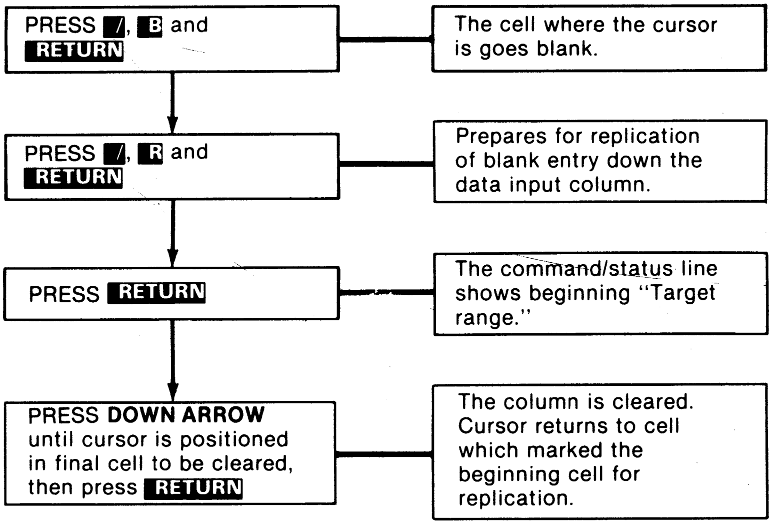
CLEARING A COLUMN IN VISICALC

INITIAL CONDITIONS:

1. One of the calculators loaded and ready to use.
2. Cursor located at the top of the column to be cleared.

PROBLEM DEFINITION: Clear an input column of existing entries with the blank and replicate commands.

ACTION ON KEYBOARD — **RESULT OR RESPONSE ON SCREEN**



PRESS /, B and RETURN — The cell where the cursor is goes blank.

PRESS /, R and RETURN — Prepares for replication of blank entry down the data input column.

PRESS RETURN — The command/status line shows beginning "Target range."

PRESS **DOWN ARROW** until cursor is positioned in final cell to be cleared, then press RETURN — The column is cleared. Cursor returns to cell which marked the beginning cell for replication.

Fig. 5-6

B. Should you accidentally destroy formulas on a calculator by writing over them, simply reload the calculator from your master diskette.

C. You may wish to print this particular worksheet so you have a hardcopy for your records. Detailed instructions on printing procedures are given in the **AMORT** Section, which discusses how to print amortization schedules. The cells designating the begin- and end-print positions will be the only differences.

10. HOW TO USE BREAK

BREAK naturally divides itself into four sections, each of which will be discussed separately in the order that it is presented on the worksheet.

Selling Price, Unit Cost, and Margin

The first section is a calculator that relates three variables, the unit selling price (SEL), the unit cost (CST), and the contribution margin (MAR). Given any two of these, the third can be computed using one of the following formulas:

MAR = [SEL-CST]/SEL,
CST = [1-MAR]*SEL,
or SEL = CST/[1-MAR].

Fixed Costs

As soon as SEL, CST, and MAR are entered on the worksheet, the only other value necessary to compute the break-even point is fixed costs. This is entered in the first line of the second section of the worksheet. Three columns are provided to input alternative values. You might, for instance, look at the best and worst cases, and something in between.

Desired Profit

To compute the sales required to support a given profit level, simply input the desired profit and recalculate the worksheet.

Desired Profit Margin

Similarly, to compute the sales required to support a given profit margin, enter the margin and recalculate the worksheet.

The flow diagram in Fig. 6-1 walks you through a typical application of BREAK. The corresponding screen is displayed in Table 6-1.

BREAK: BREAK-EVEN ANALYSIS CALCULATOR

EXAMPLE OF INPUT AND OUTPUT PROCEDURES

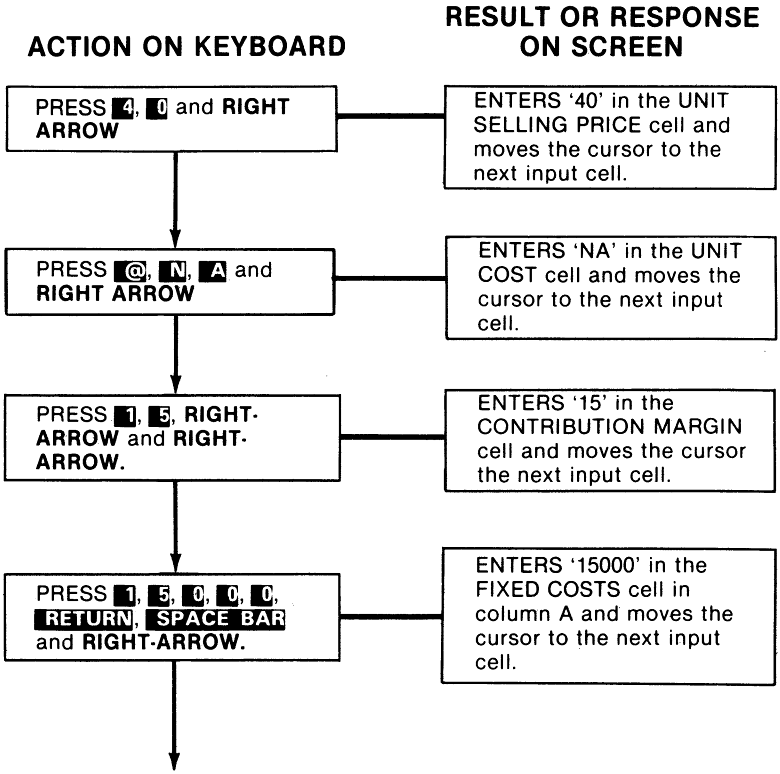
INITIAL CONDITIONS:

1) BREAK loaded and ready to use.
2) CURSOR set at UNIT SELLING PRICE cell.
3) CURSOR movement set for up and down.

PROBLEM DEFINITION:

PART 1. Compute the UNIT COST given a UNIT SELLING PRICE of $40.00 and a CONTRIBUTION MARGIN of 15%.

PART 2. Compute the break-even point in dollars and units given fixed costs of $15,000, $20,000 and $25,000.



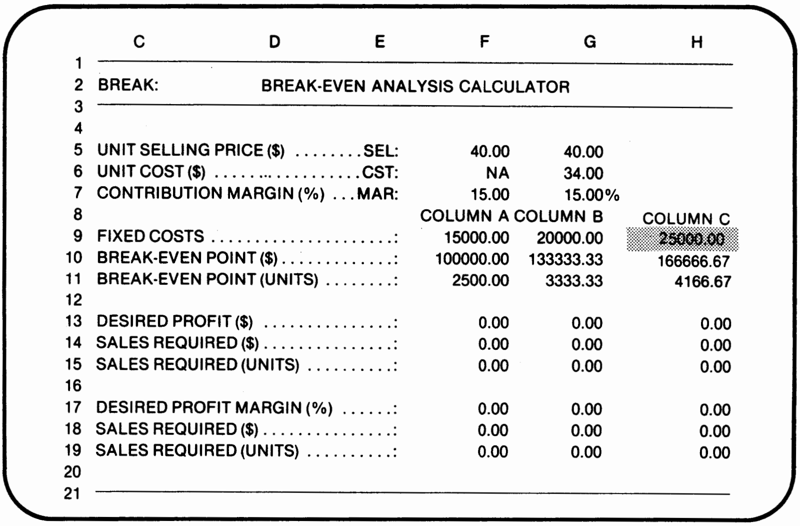
ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS 4, 0 and **RIGHT ARROW**	ENTERS '40' in the UNIT SELLING PRICE cell and moves the cursor to the next input cell.
PRESS @, N, A and **RIGHT ARROW**	ENTERS 'NA' in the UNIT COST cell and moves the cursor to the next input cell.
PRESS 1, 5, **RIGHT-ARROW** and **RIGHT-ARROW.**	ENTERS '15' in the CONTRIBUTION MARGIN cell and moves the cursor the next input cell.
PRESS 1, 5, 0, 0, 0, RETURN, SPACE BAR and **RIGHT-ARROW.**	ENTERS '15000' in the FIXED COSTS cell in column A and moves the cursor to the next input cell.

Fig. 6-1

ACTION ON KEYBOARD	**RESULT OR RESPONSE ON SCREEN**
PRESS 2, 0, 0, 0, 0 and **RIGHT-ARROW.**	ENTERS '2000' in the FIXED COSTS cell in column B and moves the cursor to the next input cell.
PRESS 2, 5, 0, 0, 0 and RETURN	ENTERS '25000' in the FIXED COSTS cell in column C.
PRESS !	RECALCULATES the worksheet.

NOTE: TO PRINT ANY PORTION OF THE WORKSHEET, SEE THE **AMORT** SECTION.

Fig. 6-1 — cont.



```
         C                 D            E            F            G            H
 1   ____________________________________________________________________________
 2   BREAK:                 BREAK-EVEN ANALYSIS CALCULATOR
 3   ____________________________________________________________________________
 4
 5   UNIT SELLING PRICE ($) ........SEL:        40.00        40.00
 6   UNIT COST ($) .................CST:           NA        34.00
 7   CONTRIBUTION MARGIN (%) ...MAR:            15.00       15.00%
 8                                          COLUMN A     COLUMN B      COLUMN C
 9   FIXED COSTS .....................:     15000.00     20000.00      25000.00
10   BREAK-EVEN POINT ($).............:    100000.00    133333.33     166666.67
11   BREAK-EVEN POINT (UNITS) ........:      2500.00      3333.33       4166.67
12
13   DESIRED PROFIT ($) ...............:        0.00         0.00          0.00
14   SALES REQUIRED ($)................:        0.00         0.00          0.00
15   SALES REQUIRED (UNITS) ..........:         0.00         0.00          0.00
16
17   DESIRED PROFIT MARGIN (%) ......:          0.00         0.00          0.00
18   SALES REQUIRED ($)................:        0.00         0.00          0.00
19   SALES REQUIRED (UNITS) ..........:         0.00         0.00          0.00
20
21   ____________________________________________________________________________
```

Table 6-1

Helpful Hints on Using BREAK

A. When you wish to enter a value such as $15,000.00, the dollar sign ("$") and the comma should not be entered. The period and the last two zeros may, or may not, be entered; however, the period is required if the last two zeros are entered.

B. Should you accidentally destroy formulas on a calculator by writing over them, simply reload the calculator from your master diskette.

C. You may wish to print this worksheet so you have a hardcopy for your records. Detailed instructions on printing procedures are given in the **AMORT** Section, which discusses how to print amortization schedules. Only the cell references for the begin- and end-print positions will change.

11. HOW TO USE DEP

The flow diagram in Fig. 6-2 walks you through a typical problem using DEP. Table 6-4 displays a typical input screen.

DEP: DEPRECIATION SCHEDULE CALCULATOR

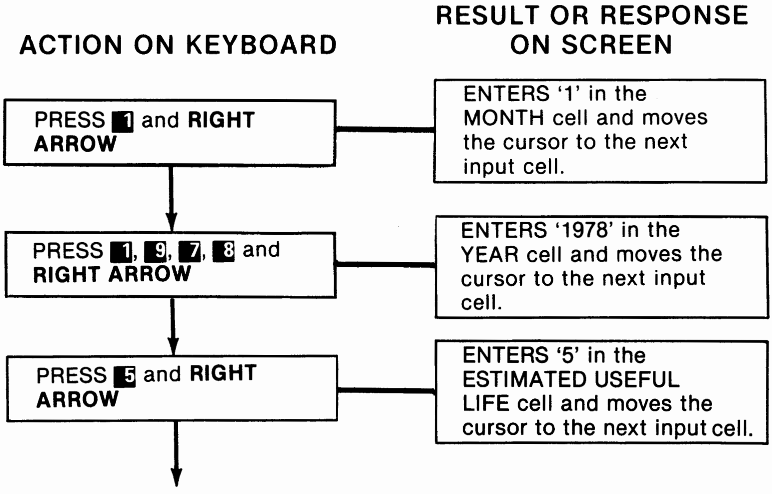
EXAMPLE OF INPUT AND OUTPUT PROCEDURES

INITIAL CONDITIONS:

1) DEP loaded and ready to use.
2) CURSOR set at MONTH cell.
3) CURSOR movement set for up and down.

PROBLEM DEFINITION: Generate depreciation schedules with the following input.

BEGINNING MONTH ....:1
BEGINNING YEAR ....:1978
ESTIMATED USEFUL LIFE..............:5
STARTING BOOK VALUE ....:$15,300
SALVAGE VALUE ....:$300



ACTION ON KEYBOARD

RESULT OR RESPONSE ON SCREEN

PRESS 1 and **RIGHT ARROW**

ENTERS '1' in the MONTH cell and moves the cursor to the next input cell.

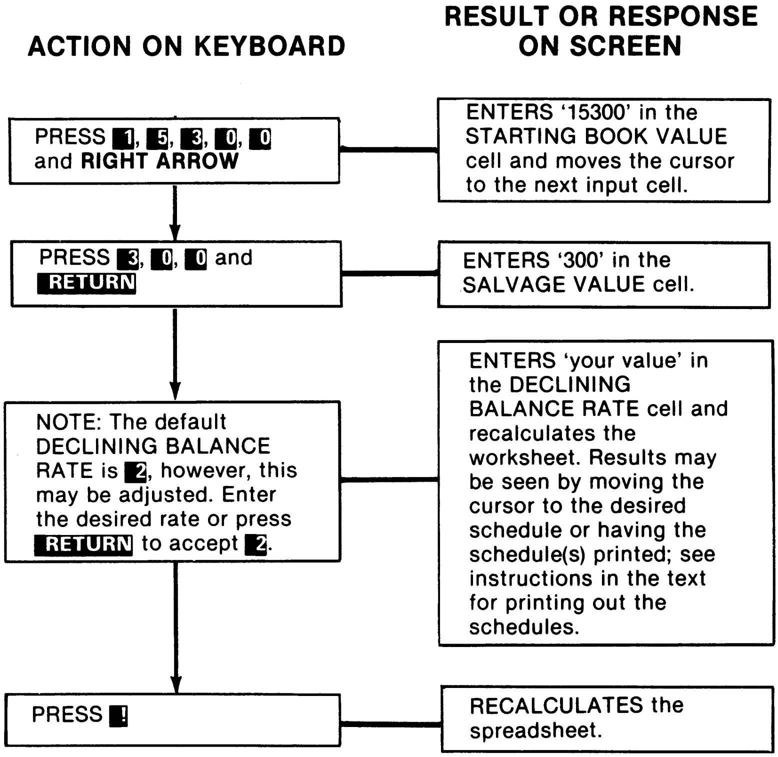
PRESS 1, 9, 7, 8 and **RIGHT ARROW**

ENTERS '1978' in the YEAR cell and moves the cursor to the next input cell.

PRESS 5 and **RIGHT ARROW**

ENTERS '5' in the ESTIMATED USEFUL LIFE cell and moves the cursor to the next input cell.

Fig. 6-2



PRESS 1, 5, 3, 0, 0 and **RIGHT ARROW**

ENTERS '15300' in the STARTING BOOK VALUE cell and moves the cursor to the next input cell.

PRESS 3, 0, 0 and RETURN

ENTERS '300' in the SALVAGE VALUE cell.

NOTE: The default DECLINING BALANCE RATE is 2, however, this may be adjusted. Enter the desired rate or press RETURN to accept 2.

ENTERS 'your value' in the DECLINING BALANCE RATE cell and recalculates the worksheet. Results may be seen by moving the cursor to the desired schedule or having the schedule(s) printed; see instructions in the text for printing out the schedules.

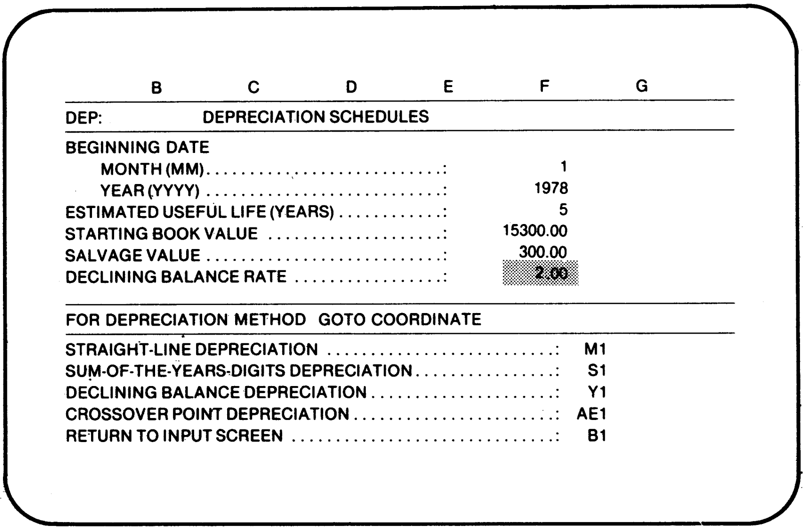
PRESS !

RECALCULATES the spreadsheet.

NOTE: TO PRINT ANY PORTION OF THE WORKSHEET, SEE **AMORT** SECTION.

TO DISPLAY RESULTS, SCROLL THE WINDOW TO THE RIGHT.

Fig. 6-2 — cont.



```
        B           C           D           E           F           G
DEP:              DEPRECIATION SCHEDULES
BEGINNING DATE
    MONTH (MM)...............................:            1
    YEAR (YYYY) .............................:         1978
ESTIMATED USEFUL LIFE (YEARS) ...............:            5
STARTING BOOK VALUE .........................:     15300.00
SALVAGE VALUE ...............................:       300.00
DECLINING BALANCE RATE ......................:         2.00
FOR DEPRECIATION METHOD  GOTO COORDINATE
STRAIGHT-LINE DEPRECIATION ..............................:   M1
SUM-OF-THE-YEARS-DIGITS DEPRECIATION.....................:   S1
DECLINING BALANCE DEPRECIATION...........................:   Y1
CROSSOVER POINT DEPRECIATION.............................:  AE1
RETURN TO INPUT SCREEN ..................................:   B1
```

Table 6-4

Helpful Hints on Using DEP

A. The next step is to print the schedules you have generated. The area to print for this particular schedule is split over four areas on your worksheet. Using the procedure described in Chapter 4, **AMORT** section, which describes how to print out an amortization schedule, you can print the four depreciation tables by changing the begin-print and end-print coordinates (cells). The following chart shows the coordinates to use.

SCHEDULE	BEGIN-PRINT	END-PRINT
Straight-line	H1	M26
Sum-of-the-years-digits	N1	S26
Declining Balance	T1	Y26
Crossover Point	Z1	AE26

B. Should you accidentally destroy formulas on the calculator by writing over them, simply reload the calculator from the master diskette.

12. HOW TO USE ACRS

The flow diagram in Fig. 6-3 walks you through a typical problem using ACRS. Table 6-5 shows a typical input screen. The results are displayed in the printout in Table 6-6.

ACRS: ACCELERATED COST RECOVERY SYSTEM CALCULATOR

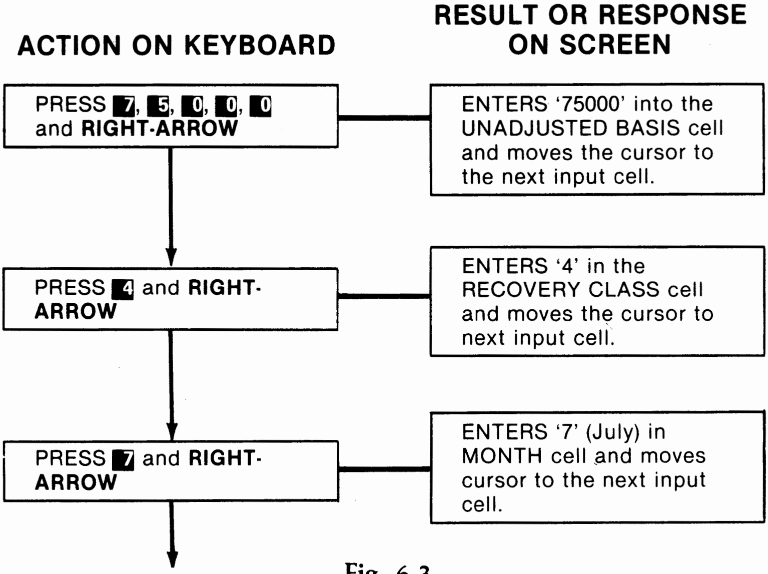
EXAMPLE OF INPUT AND OUTPUT PROCEDURES

INITIAL CONDITIONS:

1) ACRS loaded and ready for use.
2) Cursor in UNADJUSTED BASIS cell.

PROBLEM DEFINITION: Generate ACRS depreciation schedule using the following data:

Unadjusted Basis	$75,000
Recovery Class	4
Date Placed in Service:	
Month	July
Year	1981



ACTION ON KEYBOARD — **RESULT OR RESPONSE ON SCREEN**

PRESS 7, 5, 0, 0, 0 and **RIGHT-ARROW** — ENTERS '75000' into the UNADJUSTED BASIS cell and moves the cursor to the next input cell.

PRESS 4 and **RIGHT-ARROW** — ENTERS '4' in the RECOVERY CLASS cell and moves the cursor to next input cell.

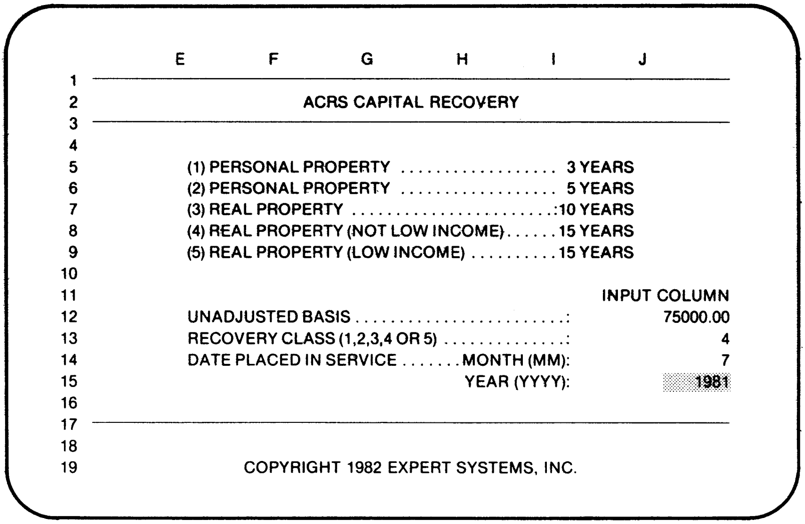
PRESS 7 and **RIGHT-ARROW** — ENTERS '7' (July) in MONTH cell and moves cursor to the next input cell.

Fig. 6-3

ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS 1, 9, 8, 1 and RETURN.	ENTERS '1981' in YEAR Cell.
PRESS !.	RECALCULATES worksheet.
PRESS >, H, 4, 0 and RETURN.	Shifts screen to view top part of schedule.

NOTE: TO PRINT ANY PORTION OF THE WORKSHEET, SEE **AMORT** SECTION.

Fig. 6-3 — cont.



```
            E          F          G          H          I          J
 1    ------------------------------------------------------------------
 2                        ACRS CAPITAL RECOVERY
 3    ------------------------------------------------------------------
 4
 5          (1) PERSONAL PROPERTY .................. 3 YEARS
 6          (2) PERSONAL PROPERTY .................. 5 YEARS
 7          (3) REAL PROPERTY .......................:10 YEARS
 8          (4) REAL PROPERTY (NOT LOW INCOME)...... 15 YEARS
 9          (5) REAL PROPERTY (LOW INCOME) .......... 15 YEARS
10
11                                                       INPUT COLUMN
12          UNADJUSTED BASIS .......................:        75000.00
13          RECOVERY CLASS (1,2,3,4 OR 5) ..........:               4
14          DATE PLACED IN SERVICE .......MONTH (MM):               7
15                                         YEAR (YYYY):          1981
16
17    ------------------------------------------------------------------
18
19                  COPYRIGHT 1982 EXPERT SYSTEMS, INC.
```

Table 6-5

ACRS DEPRECIATION

PERSONAL PROPERTY
BEGINNING: 7 1981

YEAR	ACRS %	ANNUAL	CUMULATIVE	BASIS
1981	6.00	4500.00	4500.00	75000.00
1982	11.00	8250.00	12750.00	
1983	10.00	7500.00	20250.00	
1984	9.00	6750.00	27000.00	
1985	8.00	6000.00	33000.00	
1986	7.00	5250.00	38250.00	
1987	6.00	4500.00	42750.00	
1988	5.00	3750.00	46500.00	
1989	5.00	3750.00	50250.00	
1990	5.00	3750.00	54000.00	
1991	5.00	3750.00	57750.00	
1992	5.00	3750.00	61500.00	
1993	5.00	3750.00	65250.00	
1994	5.00	3750.00	69000.00	
1995	5.00	3750.00	72750.00	
1996	3.00	2250.00	75000.00	

Table 6-6

Helpful Hints on Using ACRS

A. When you wish to enter a value such as $15,000.00, the dollar sign ("$") and the comma should not be entered. The period and the last two zeros may or may not be entered; however, the period is required if the last two zeros are entered.

B. Should you accidentally destroy formulas on a calculator by writing over them, simply reload the calculator from your master diskette.

C. You may wish to print out this particular worksheet so you have a hardcopy for your records. Detailed instructions on printing procedures are given in **AMORT** Section, which discusses how to print amortization schedules. Only the cell references for the begin- and end-print positions will change.

13. HOW TO USE STAT

The input for STAT is a set of data that is entered in a single column. A typical input screen is displayed in Table 7-1. The flow diagram in Fig. 7-1 walks you through a typical problem using STAT.

STAT: STATISTICAL FUNCTION CALCULATOR

EXAMPLE OF INPUT AND OUTPUT PROCEDURES

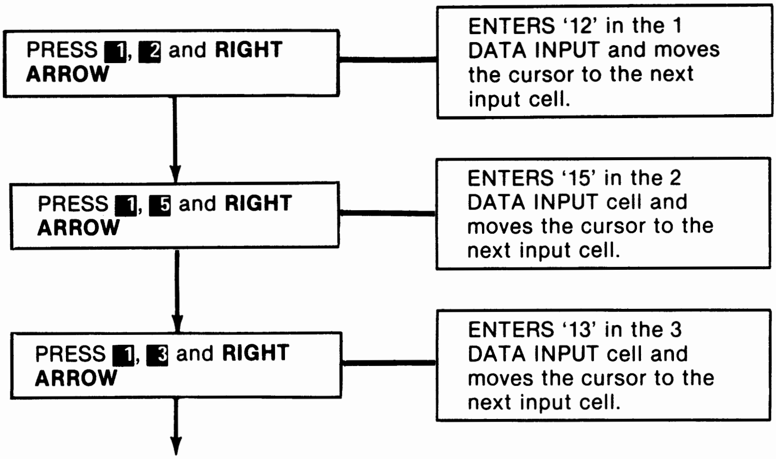
INITIAL CONDITIONS:

1) STAT loaded and ready to use.
2) CURSOR set at 1 DATA VALUE cell.
3) CURSOR movement set for up and down.
4) DATA VALUE column cleared for input.

PROBLEM DEFINITION: Compute the mean, standard deviation, and coefficient of correlation of the following set of data.

12,15,13,15,11,17

ACTION ON KEYBOARD | **RESULT OR RESPONSE ON SCREEN**



PRESS 1, 2 and **RIGHT ARROW** — ENTERS '12' in the 1 DATA INPUT and moves the cursor to the next input cell.

PRESS 1, 5 and **RIGHT ARROW** — ENTERS '15' in the 2 DATA INPUT cell and moves the cursor to the next input cell.

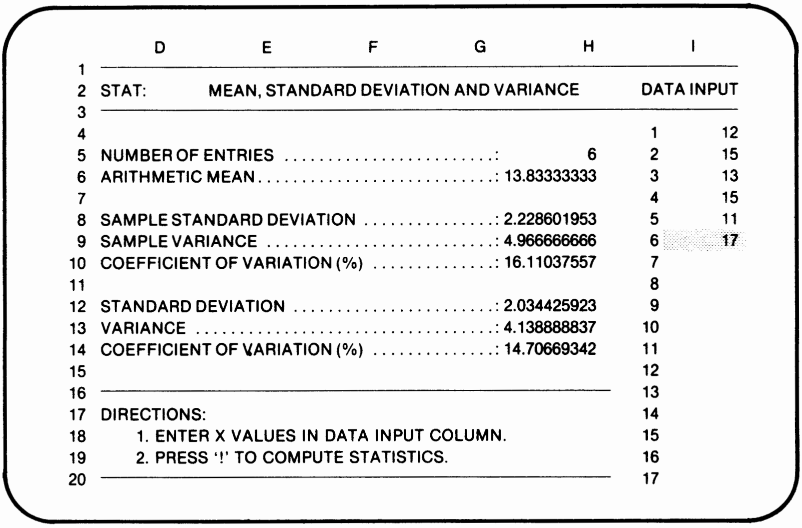
PRESS 1, 3 and **RIGHT ARROW** — ENTERS '13' in the 3 DATA INPUT cell and moves the cursor to the next input cell.

Fig. 7-1

ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS 1, 5 and **RIGHT ARROW**	ENTERS '15' in the 4 DATA INPUT cell and moves the cursor to the next input cell.
PRESS 1, 1 and **RIGHT ARROW**	ENTERS '11' in the 5 DATA INPUT cell and moves the cursor to the next input cell.
PRESS 1, 7 and RETURN	ENTERS '17' in the 6 DATA INPUT cell.
PRESS !	RECALCULATES the worksheet and displays the results.

NOTE: TO PRINT ANY PORTION OF THE WORKSHEET, SEE **AMORT** SECTION.

Fig. 7-1 — cont.



```
             D            E            F            G            H              I
 1   ----------------------------------------------------------------------------------
 2   STAT:        MEAN, STANDARD DEVIATION AND VARIANCE                  DATA INPUT
 3   ----------------------------------------------------------------------------------
 4                                                                       1        12
 5   NUMBER OF ENTRIES ........................:            6            2        15
 6   ARITHMETIC MEAN...........................: 13.83333333            3        13
 7                                                                       4        15
 8   SAMPLE STANDARD DEVIATION ................: 2.228601953            5        11
 9   SAMPLE VARIANCE ..........................: 4.966666666            6        17
10   COEFFICIENT OF VARIATION (%) .............: 16.11037557            7
11                                                                       8
12   STANDARD DEVIATION .......................: 2.034425923            9
13   VARIANCE .................................: 4.138888837           10
14   COEFFICIENT OF VARIATION (%) .............: 14.70669342           11
15                                                                      12
16   ------------------------------------------------------------       13
17   DIRECTIONS:                                                        14
18        1. ENTER X VALUES IN DATA INPUT COLUMN.                       15
19        2. PRESS '!' TO COMPUTE STATISTICS.                           16
20   ------------------------------------------------------------       17
```

Table 7-1

Helpful Hints on Using STAT

A. Sometimes it is necessary to clear the input column, for example, when fewer values are to be entered than already are in the column. Fig. 7-2 illustrates how this is done.

B. Should you accidentally destroy formulas on a calculator by writing over them, simply reload the calculator from your master diskette.

C. You may wish to print this particular worksheet so you have a hardcopy for your records. Detailed instructions on printing procedures are given in the **AMORT** Section, which discusses how to print amortization schedules. Only the references to the begin- and end-print cells will change.

D. This worksheet is very simple, yet powerful. The entry of up to 249 data points in column 1 is allowed.

CLEARING A COLUMN IN VISICALC

INITIAL CONDITIONS:
(1) One of the calculators loaded and ready to use.
(2) Cursor located at the top of the column to be cleared.

PROBLEM DEFINITION: Clear an input column of existing entries with the blank and replicate commands.

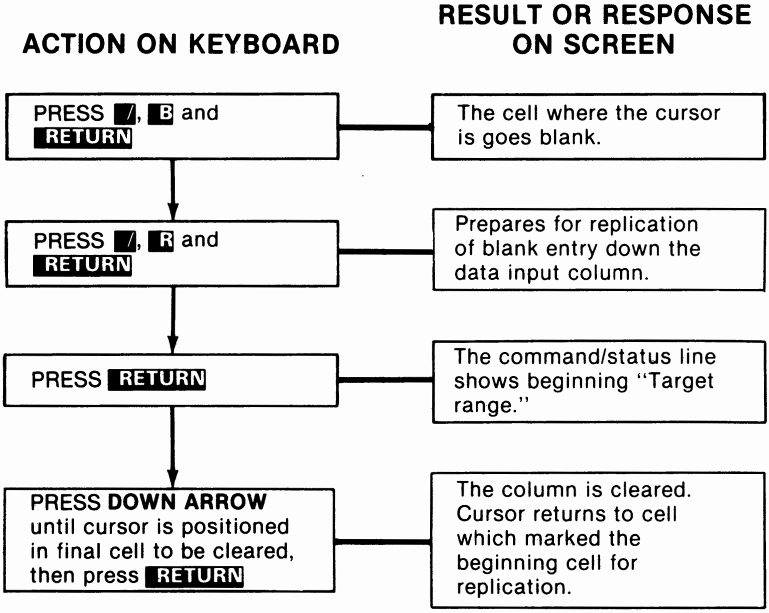

ACTION ON KEYBOARD
RESULT OR RESPONSE ON SCREEN
PRESS /, B and RETURN
The cell where the cursor is goes blank.
PRESS /, R and RETURN
Prepares for replication of blank entry down the data input column.
PRESS RETURN
The command/status line shows beginning "Target range."
PRESS DOWN ARROW until cursor is positioned in final cell to be cleared, then press RETURN
The column is cleared. Cursor returns to cell which marked the beginning cell for replication.

Fig. 7-2

14. HOW TO USE LINREG

A set of paired data, which is entered in two columns on the worksheet, is the input for LINREG. A typical input screen is displayed in Table 7-2 (Note, the windows have been removed in this screen to show you the actual layout of the calculator on the worksheet.) The flow diagram in Fig. 7-3 walks you through a typical problem using LINREG.

In addition to the problem illustrated in the previous walkthrough, this calculator can be used to estimate a Y-value given an X-value, or an X-value given a Y-value. This is done in the row labeled "ENTER '@NA' FOR UNKNOWN VALUE →." For example, to compute a Y-value, move the cursor to the "X-value" cell and enter a numerical value, 6 for example. To enter this value and compute:

Press: **6** and RIGHT ARROW.

Press: **@**, **N**, **A**, **RETURN**, and **!**.

The results are displayed in the row, below, labeled "ESTIMATED VALUES."

NOTE: Your previous X and Y values must still be in the lower window so that the estimated values may be calculated.

An analogous calculation is made to compute an X value.

LINREG: A LINEAR REGRESSION CALCULATOR

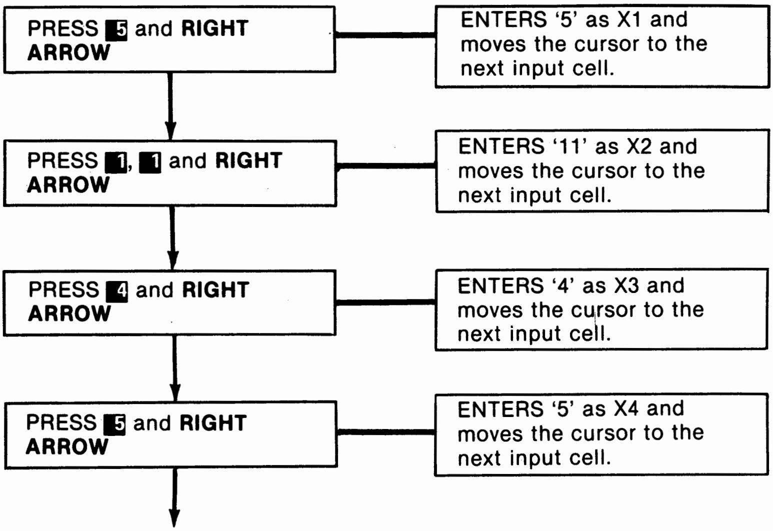
EXAMPLE OF INPUT AND OUTPUT PROCEDURES

INITIAL CONDITIONS:

1) LINREG loaded and ready to use.
2) CURSOR set at the top of column X.
3) CURSOR movement set for up and down.

PROBLEM DEFINITION: ENTER the following data for linear regression computations.

X	Y
5	31
11	40
4	30
5	34
3	25
2	20



ACTION ON KEYBOARD	RESULT OR RESPONSE ON KEYBOARD
PRESS 5 and **RIGHT ARROW**	ENTERS '5' as X1 and moves the cursor to the next input cell.
PRESS 1, 1 and **RIGHT ARROW**	ENTERS '11' as X2 and moves the cursor to the next input cell.
PRESS 4 and **RIGHT ARROW**	ENTERS '4' as X3 and moves the cursor to the next input cell.
PRESS 5 and **RIGHT ARROW**	ENTERS '5' as X4 and moves the cursor to the next input cell.

Fig. 7-3

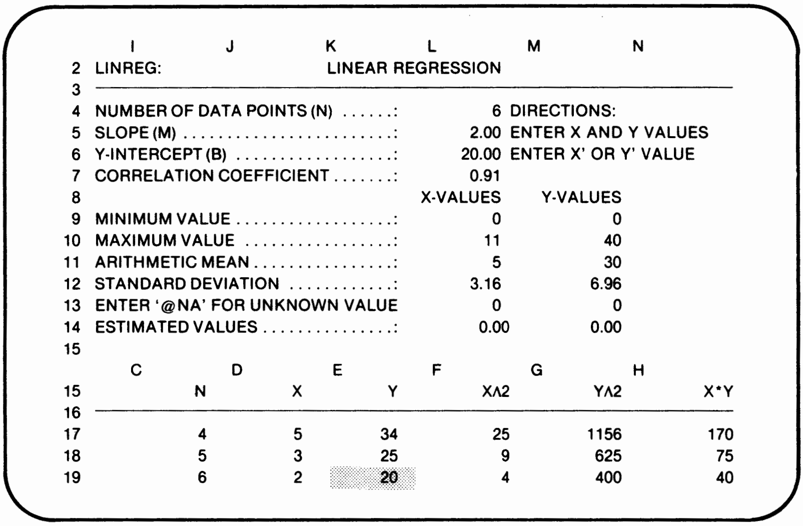
ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS 3 and **RIGHT ARROW**	ENTERS '3' as X5 and moves the cursor to the next input cell.
PRESS 2 and RETURN	ENTERS '2' as X6.
PRESS >, E, 1, 7 and RETURN	MOVES the cursor to the top of the Y column.
PRESS 3, 1 and **RIGHT ARROW**	ENTERS '31' as Y1 and moves the cursor to the next input cell.
PRESS 4, 0 and **RIGHT ARROW**	ENTERS '40' as Y2 and moves the cursor to the next input cell.
PRESS 3, 0 and **RIGHT ARROW**	ENTERS '30' as Y3 and moves the cursor to the next input cell.
PRESS 3, 4 and **RIGHT ARROW**	ENTERS '34' as Y4 and moves the cursor to the next input cell.
PRESS 2, 5 and **RIGHT ARROW**	ENTERS '25' as Y5 and moves the cursor to the next input cell.

Fig. 7-3 — cont.

ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS 2, 0 and RETURN	ENTERS '20' as Y6 and moves the cursor to the next input cell.
PRESS !	RECALCULATES the worksheet and displays the results in columns L and M.

NOTES: TO PRINT ANY PORTION OF THE WORKSHEET, SEE **AMORT** SECTION. TO VIEW THE RESULTS, SCROLL THE UPPER WINDOW TO THE RIGHT.

Fig. 7-3 — cont.



```
          I          J          K          L          M          N
 2  LINREG:                     LINEAR REGRESSION
 3  ------------------------------------------------------------------
 4  NUMBER OF DATA POINTS (N) ......:         6  DIRECTIONS:
 5  SLOPE (M) ......................:      2.00  ENTER X AND Y VALUES
 6  Y-INTERCEPT (B) ................:     20.00  ENTER X' OR Y' VALUE
 7  CORRELATION COEFFICIENT ........:      0.91
 8                                     X-VALUES     Y-VALUES
 9  MINIMUM VALUE ..................:         0            0
10  MAXIMUM VALUE ..................:        11           40
11  ARITHMETIC MEAN ................:         5           30
12  STANDARD DEVIATION .............:      3.16         6.96
13  ENTER '@NA' FOR UNKNOWN VALUE             0            0
14  ESTIMATED VALUES ...............:      0.00         0.00
15
          C          D          E          F          G          H
15              N          X          Y        X^2        Y^2        X*Y
16  ------------------------------------------------------------------
17              4          5         34         25       1156        170
18              5          3         25          9        625         75
19              6          2         20          4        400         40
```

Table 7-2

Helpful Hints on Using LINREG

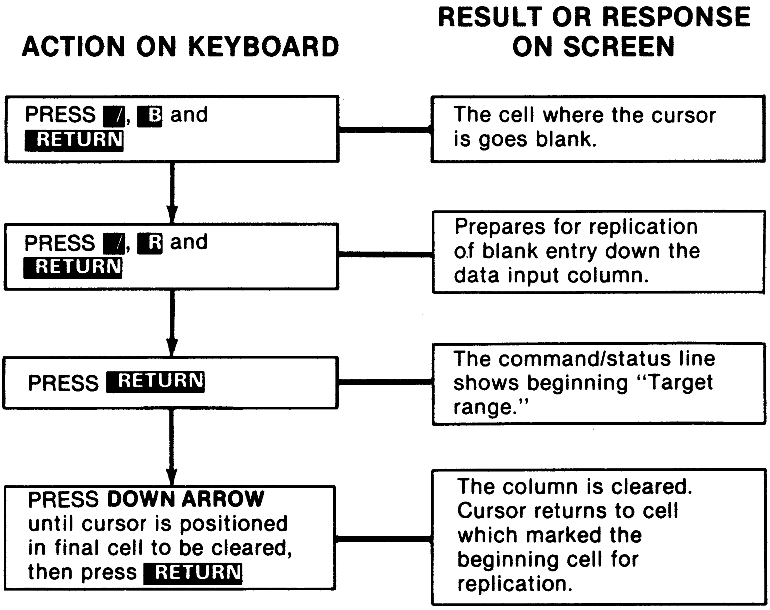
A. Sometimes it is necessary to clear the input columns, for example, when fewer values are to be entered than already are in the column. Fig. 7-4 illustrates how this is done.

CLEARING A COLUMN IN VISICALC

INITIAL CONDITIONS:

(1) One of the calculators loaded and ready to use.
(2) Cursor located at the top of the column to be cleared.

PROBLEM DEFINITION: Clear an input column of existing entries with the blank and replicate commands.



PRESS /, B and RETURN — The cell where the cursor is goes blank.

PRESS /, R and RETURN — Prepares for replication of blank entry down the data input column.

PRESS RETURN — The command/status line shows beginning "Target range."

PRESS **DOWN ARROW** until cursor is positioned in final cell to be cleared, then press RETURN — The column is cleared. Cursor returns to cell which marked the beginning cell for replication.

Fig. 7-4

B. Should you accidentally destroy formulas on a calculator by writing over them, simply reload the calculator from your master diskette.

C. You may wish to print this particular worksheet so you have a hardcopy for your records. Detailed instructions on printing procedures are given in the **AMORT** Section, which discusses how to print amortization schedules. Only the references to the begin- and end-print coordinates (cells) will change.

15. HOW TO USE VRM: VARIABLE RATE MORTGAGES

All of the mortgage calculators have basically the same screen format, and the same entry and recalculation procedures. The step-by-step instructions in Fig. 8-1 below walk you through a typical problem using VRM. The corresponding screen is displayed in Table 8-1.

VRM: A VARIABLE RATE MORTGAGE CALCULATOR

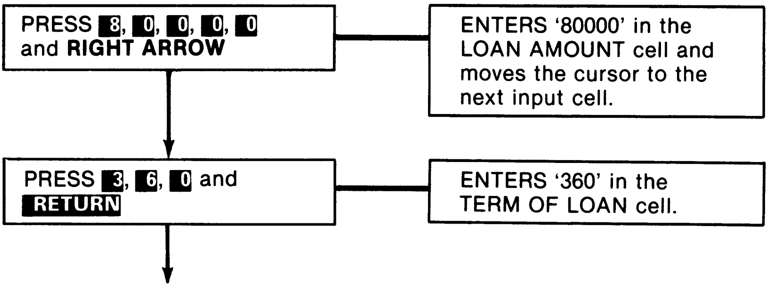
EXAMPLE OF INPUT AND OUTPUT PROCEDURES

INITIAL CONDITIONS:

1) VRM loaded and ready to use.
2) CURSOR set at LOAN AMOUNT cell.
3) TERM and RATE columns cleared for input.
4) CURSOR movement set for up and down.

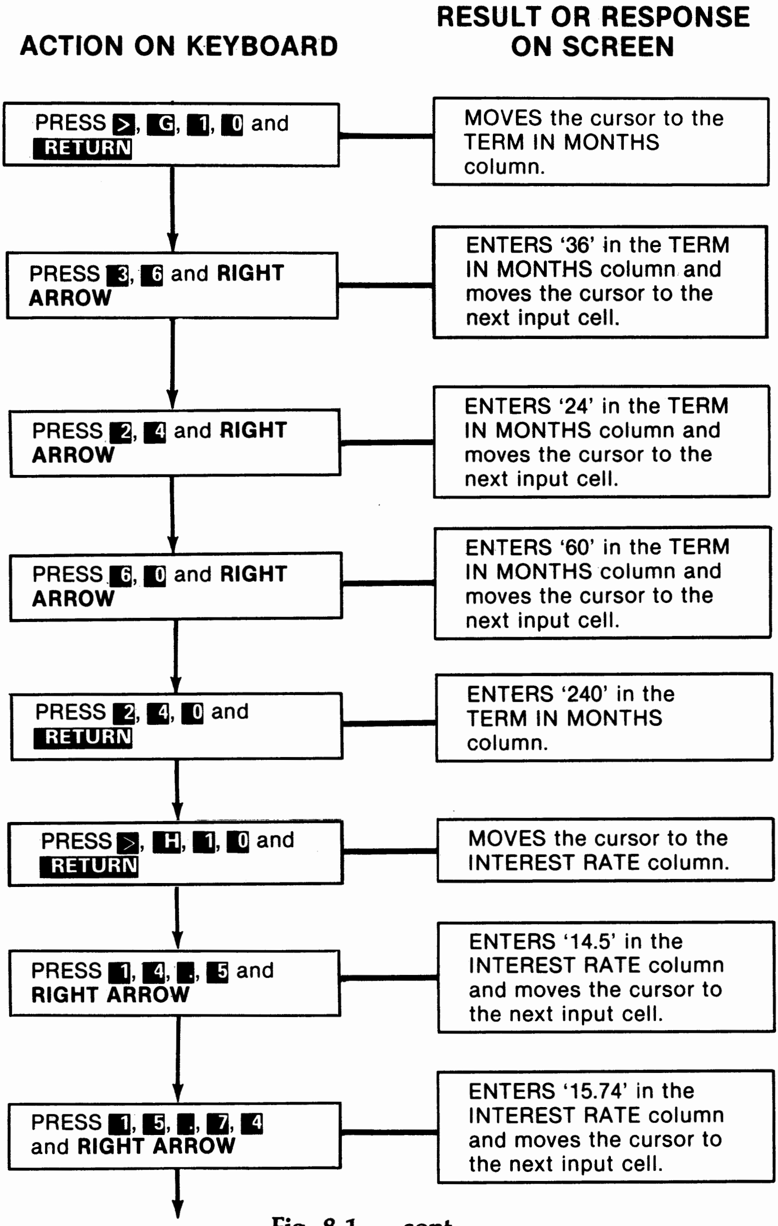
PROBLEM DEFINITION: Compute the payment amounts of a variable rate mortgage given the following inputs.

LOAN AMOUNT	$80,000
TERM OF LOAN (MONTHS)	360
36 MONTHS	14.50%
24 MONTHS	15.74%
60 MONTHS	15.50%
240 MONTHS	14.00%



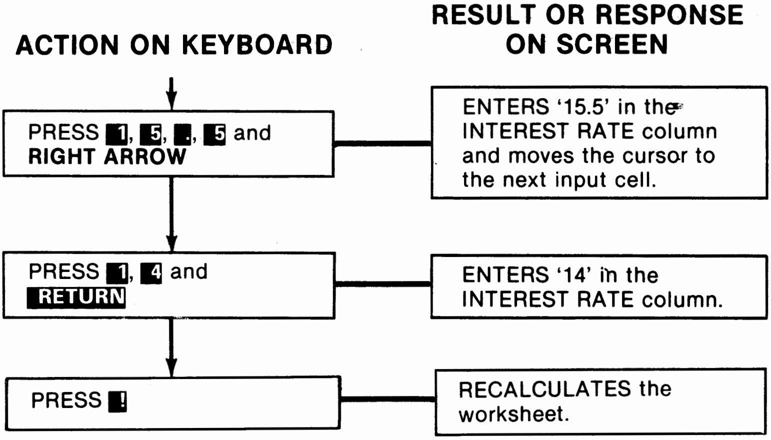
ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS 8, 0, 0, 0, 0 and **RIGHT ARROW**	ENTERS '80000' in the LOAN AMOUNT cell and moves the cursor to the next input cell.
PRESS 3, 6, 0 and RETURN	ENTERS '360' in the TERM OF LOAN cell.

Fig. 8-1



ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS >, G, 1, 0 and RETURN	MOVES the cursor to the TERM IN MONTHS column.
PRESS 3, 6 and **RIGHT ARROW**	ENTERS '36' in the TERM IN MONTHS column and moves the cursor to the next input cell.
PRESS 2, 4 and **RIGHT ARROW**	ENTERS '24' in the TERM IN MONTHS column and moves the cursor to the next input cell.
PRESS 6, 0 and **RIGHT ARROW**	ENTERS '60' in the TERM IN MONTHS column and moves the cursor to the next input cell.
PRESS 2, 4, 0 and RETURN	ENTERS '240' in the TERM IN MONTHS column.
PRESS >, H, 1, 0 and RETURN	MOVES the cursor to the INTEREST RATE column.
PRESS 1, 4, ., 5 and **RIGHT ARROW**	ENTERS '14.5' in the INTEREST RATE column and moves the cursor to the next input cell.
PRESS 1, 5, ., 7, 4 and **RIGHT ARROW**	ENTERS '15.74' in the INTEREST RATE column and moves the cursor to the next cell.

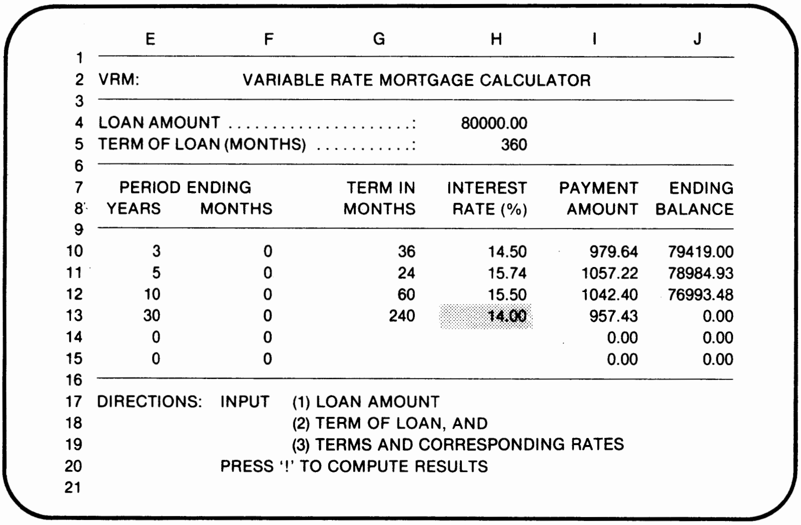
Fig. 8-1 — cont.



ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS 1, 5, ., 5 and **RIGHT ARROW**	ENTERS '15.5' in the INTEREST RATE column and moves the cursor to the next input cell.
PRESS 1, 4 and RETURN	ENTERS '14' in the INTEREST RATE column.
PRESS !	RECALCULATES the worksheet.

NOTE: TO PRINT ANY PORTION OF THE WORKSHEET, SEE **AMORT** SECTION.

Fig. 8-1 — cont.



```
         E          F           G           H          I          J
 1  ---------------------------------------------------------------------
 2  VRM:            VARIABLE RATE MORTGAGE CALCULATOR
 3  ---------------------------------------------------------------------
 4  LOAN AMOUNT .....................:           80000.00
 5  TERM OF LOAN (MONTHS) ...........:                360
 6  ---------------------------------------------------------------------
 7    PERIOD ENDING           TERM IN    INTEREST    PAYMENT     ENDING
 8   YEARS     MONTHS          MONTHS    RATE (%)     AMOUNT    BALANCE
 9  ---------------------------------------------------------------------
10       3          0              36       14.50     979.64   79419.00
11       5          0              24       15.74    1057.22   78984.93
12      10          0              60       15.50    1042.40   76993.48
13      30          0             240       14.00     957.43       0.00
14       0          0                                   0.00       0.00
15       0          0                                   0.00       0.00
16  ---------------------------------------------------------------------
17  DIRECTIONS:  INPUT   (1) LOAN AMOUNT
18                       (2) TERM OF LOAN, AND
19                       (3) TERMS AND CORRESPONDING RATES
20               PRESS '!' TO COMPUTE RESULTS
21
```

Table 8-1

Helpful Hints on Using VRM

A. It is sometimes necessary to clear an input column, for instance, when fewer values are to be entered than are already in the column. Fig. 8-2 illustrates how this is done.

CLEARING A COLUMN IN VISICALC

INITIAL CONDITIONS:

(1) One of the calculators loaded and ready to use.
(2) Cursor located at the top of the column to be cleared.

PROBLEM DEFINITION: Clear an input column of existing entries with the blank and replicate commands.

ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS /, B and RETURN	The cell where the cursor is goes blank.
PRESS /, R and RETURN	Prepares for replication of blank entry down the data input column.
PRESS RETURN	The command/status line shows beginning "Target range."
PRESS **DOWN ARROW** until cursor is positioned in final cell to be cleared, then press RETURN	The column is cleared. Cursor returns to cell which marked the beginning cell for replication.

Fig. 8-2

B. Should you accidentally destroy formulas on a calculator by writing over them, simply reload the calculator from your master diskette.

C. You may wish to print this particular worksheet so you have a hardcopy for your records. Detailed instructions on printing procedures are given in the **AMORT** Section which discusses how to print amortization schedules. The begin- and end-print positions will be the only differences.

16. HOW TO USE GPM: GRADUATED PAYMENT MORTGAGES

All of the mortgage calculators have basically the same screen format, and the same entry and recalculation procedures. The step-by-step instructions in Fig. 8-3 below walk you through a typical problem using GPM. The corresponding screen is displayed in Table 8-2.

GPM: GRADUATED PAYMENT MORTGAGE CALCULATOR

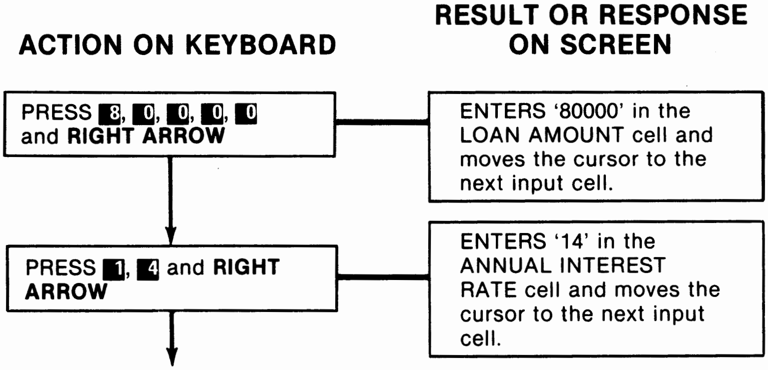
EXAMPLE OF INPUT AND OUTPUT PROCEDURES

INITIAL CONDITIONS:

1) GPM loaded and ready to use.
2) CURSOR set at LOAN AMOUNT cell.
3) TERM and %PMT columns cleared of all values.
4) CURSOR movement set for up and down.

PROBLEM DEFINITION: Compute the payment amounts of a variable rate mortgage given the following inputs.

LOAN AMOUNT	$80,000
ANNUAL INTEREST RATE	14.00%
TERM OF LOAN (MONTHS)	360
36 MONTHS	75%
24 MONTHS	90%
300 MONTHS	100%



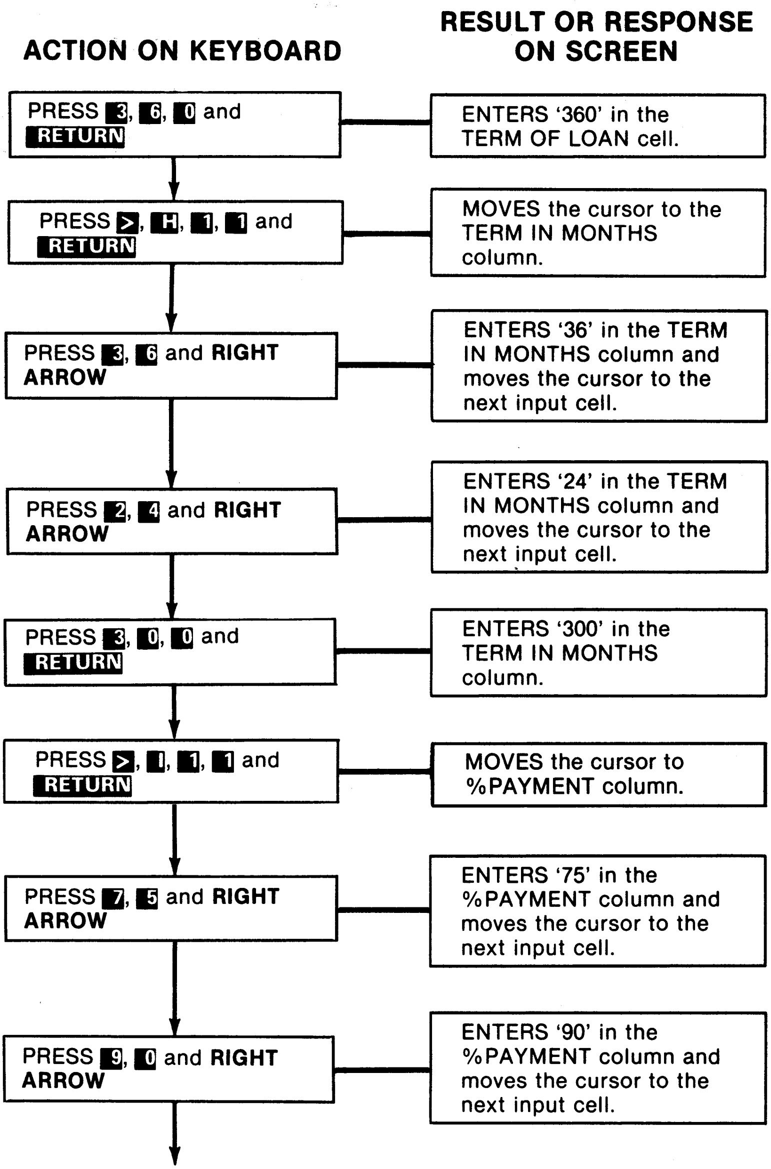
PRESS 8, 0, 0, 0, 0 and **RIGHT ARROW**

ENTERS '80000' in the LOAN AMOUNT cell and moves the cursor to the next input cell.

PRESS 1, 4 and **RIGHT ARROW**

ENTERS '14' in the ANNUAL INTEREST RATE cell and moves the cursor to the next input cell.

Fig. 8-3



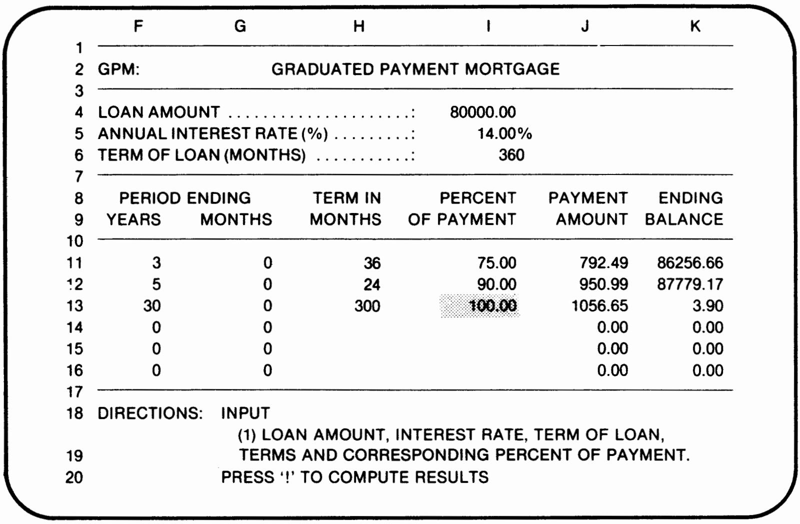
ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS 3, 6, 0 and RETURN	ENTERS '360' in the TERM OF LOAN cell.
PRESS >, H, 1, 1 and RETURN	MOVES the cursor to the TERM IN MONTHS column.
PRESS 3, 6 and **RIGHT ARROW**	ENTERS '36' in the TERM IN MONTHS column and moves the cursor to the next input cell.
PRESS 2, 4 and **RIGHT ARROW**	ENTERS '24' in the TERM IN MONTHS column and moves the cursor to the next input cell.
PRESS 3, 0, 0 and RETURN	ENTERS '300' in the TERM IN MONTHS column.
PRESS >, I, 1, 1 and RETURN	MOVES the cursor to %PAYMENT column.
PRESS 7, 5 and **RIGHT ARROW**	ENTERS '75' in the %PAYMENT column and moves the cursor to the next input cell.
PRESS 9, 0 and **RIGHT ARROW**	ENTERS '90' in the %PAYMENT column and moves the cursor to the next input cell.

Fig. 8-3 — cont.

ACTION ON KEYBOARD	RESULT OR RESPONSE ON KEYBOARD
PRESS 1, 0, 0 and RETURN	ENTERS '100' in the %PAYMENT column.
PRESS !	RECALCULATES the worksheet.

NOTE: TO PRINT ANY PORTION OF THE WORKSHEET, SEE **AMORT** SECTION.

Fig. 8-3 — cont.



```
         F              G             H               I              J           K
 1  ------------------------------------------------------------------------------------
 2  GPM:                   GRADUATED PAYMENT MORTGAGE
 3  ------------------------------------------------------------------------------------
 4  LOAN AMOUNT ......................:           80000.00
 5  ANNUAL INTEREST RATE (%) .........:              14.00%
 6  TERM OF LOAN (MONTHS) ...........:               360
 7  ------------------------------------------------------------------------------------
 8    PERIOD ENDING             TERM IN         PERCENT       PAYMENT      ENDING
 9   YEARS      MONTHS          MONTHS       OF PAYMENT        AMOUNT     BALANCE
10  ------------------------------------------------------------------------------------
11       3           0              36            75.00         792.49    86256.66
12       5           0              24            90.00         950.99    87779.17
13      30           0             300           100.00        1056.65        3.90
14       0           0                                            0.00        0.00
15       0           0                                            0.00        0.00
16       0           0                                            0.00        0.00
17  ------------------------------------------------------------------------------------
18  DIRECTIONS:    INPUT
                     (1) LOAN AMOUNT, INTEREST RATE, TERM OF LOAN,
19                   TERMS AND CORRESPONDING PERCENT OF PAYMENT.
20                 PRESS '!' TO COMPUTE RESULTS
```

Table 8-2

Helpful Hints on Using GPM

A. It, sometimes, is necessary to clear an input column, for example, when fewer values are to be entered than are already in the column. Fig. 8-4 illustrates how this is done.

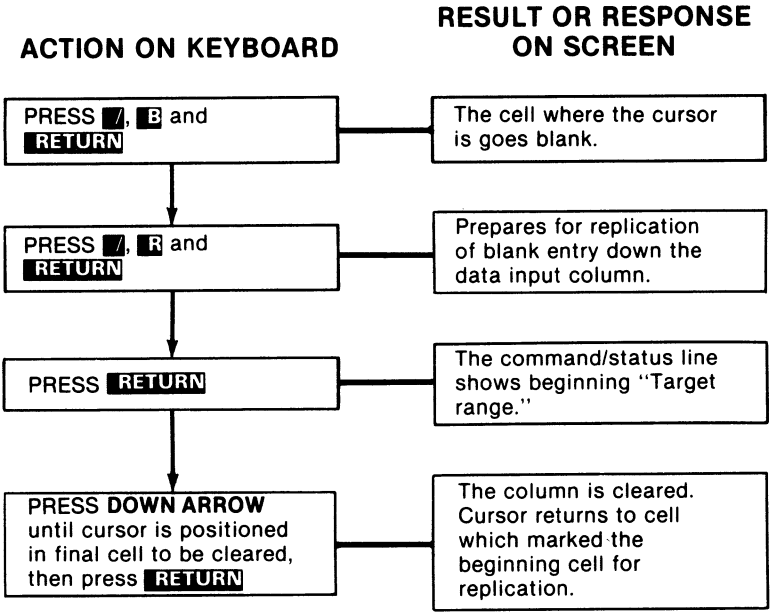
B. Should you accidentally destroy formulas on a calculator by writing over them, simply reload the calculator from your master diskette.

CLEARING A COLUMN IN VISICALC

INITIAL CONDITIONS:

(1) One of the calculators loaded and ready to use.
(2) Cursor located at the top of the column to be cleared.

PROBLEM DEFINITION: Clear an input column of existing entries with the blank and replicate commands.



ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS /, B and RETURN	The cell where the cursor is goes blank.
PRESS /, R and RETURN	Prepares for replication of blank entry down the data input column.
PRESS RETURN	The command/status line shows beginning "Target range."
PRESS **DOWN ARROW** until cursor is positioned in final cell to be cleared, then press RETURN	The column is cleared. Cursor returns to cell which marked the beginning cell for replication.

Fig. 8-4

C. You may wish to print this particular worksheet so that you have a hardcopy for your records. Detailed instructions on printing procedures are given in the **AMORT** Section which discusses how to print amortization schedules. Only the coordinates (cells) referencing the begin- and end-print positions will change.

17. HOW TO USE GPAM: GRADUATED PAYMENT ADJUSTABLE MORTGAGES

All of the mortgage calculators have basically the same screen format, and the same entry and recalculation procedures. The step-by-step instructions in Fig. 8-5 below walk you through a typical problem using GPAM. The corresponding screen is displayed in Table 8-3.

GPAM: GRADUATED PAYMENT MORTGAGE CALCULATOR

EXAMPLE OF INPUT AND OUTPUT PROCEDURES

INITIAL CONDITIONS:

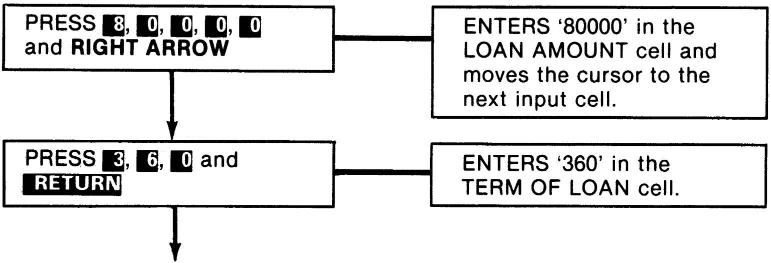
1) GPAM loaded and ready to use.
2) CURSOR set at LOAN AMOUNT cell.
3) TERM, %PMT and RATE columns cleared of all values.
4) CURSOR movement set for up and down.

PROBLEM DEFINITION: Compute the payment amounts of a graduated payment mortgage given the following inputs.

LOAN AMOUNT	$80,000
TERM OF LOAN (MONTHS)	360

36 MONTHS	14.00%	75%
24 MONTHS	15.50%	90%
60 MONTHS	15.60%	100%
240 MONTHS	14.05%	100%

ACTION ON KEYBOARD | **RESULT OR RESPONSE ON SCREEN**



PRESS 8, 0, 0, 0, 0 and **RIGHT ARROW**

ENTERS '80000' in the LOAN AMOUNT cell and moves the cursor to the next input cell.

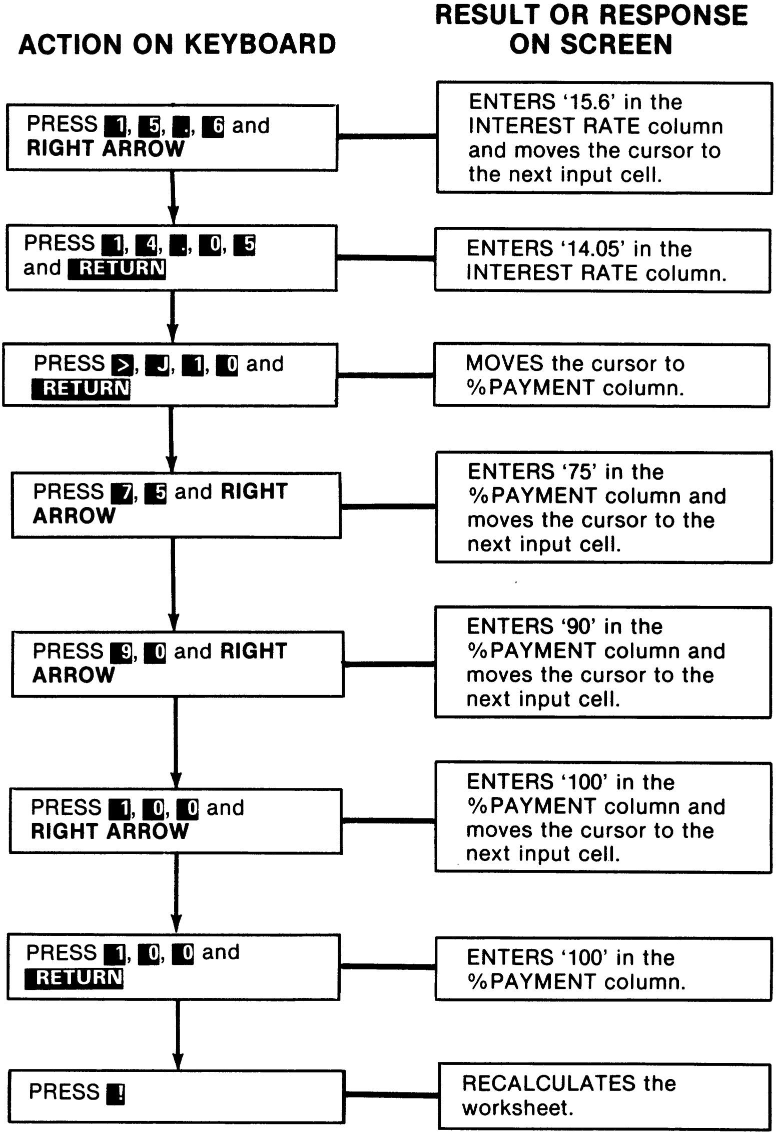
PRESS 3, 6, 0 and RETURN

ENTERS '360' in the TERM OF LOAN cell.

Fig. 8-5

ACTION ON KEYBOARD	**RESULT OR RESPONSE ON SCREEN**
PRESS >, H, 1, 0 and RETURN	MOVES the cursor to the TERM IN MONTHS column.
PRESS 3, 6 and **RIGHT ARROW**	ENTERS '36' in the TERM IN MONTHS column and moves the cursor to the next input cell.
PRESS 2, 4 and **RIGHT ARROW**	ENTERS '24' in the TERM IN MONTHS column and moves the cursor to the next input cell.
PRESS 6, 0 and **RIGHT ARROW**	ENTERS '60' in the TERM IN MONTHS column and moves the cursor to the next input cell.
PRESS 2, 4, 0 and RETURN	ENTERS '240' in the TERM IN MONTHS column.
PRESS >, I, 1, 0 and RETURN	MOVES the cursor to the INTEREST RATE column.
PRESS 1, 4 and **RIGHT ARROW**	ENTERS '14' in the INTEREST RATE column and moves the cursor to the next input cell.
PRESS 1, 5, ., 5 and **RIGHT ARROW**	ENTERS '15.5' in the INTEREST RATE column and moves the cursor to the next input cell.

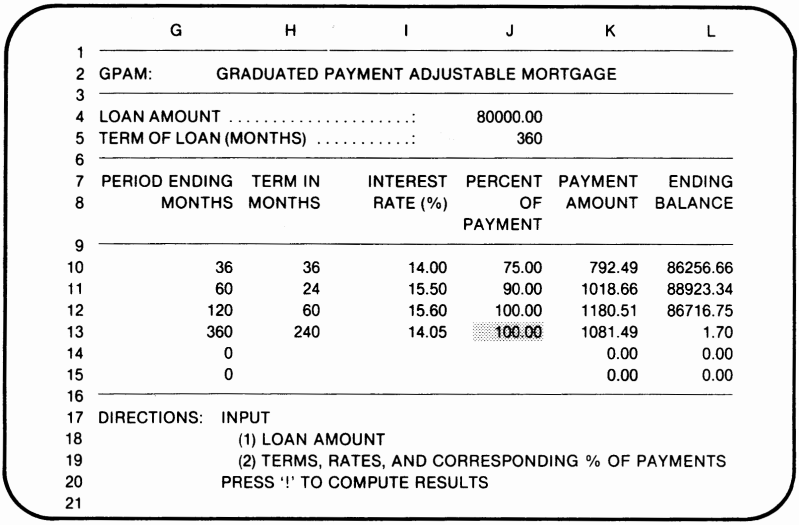
Fig. 8-5 — cont.



ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS 1, 5, ., 6 and **RIGHT ARROW**	ENTERS '15.6' in the INTEREST RATE column and moves the cursor to the next input cell.
PRESS 1, 4, ., 0, 5 and RETURN	ENTERS '14.05' in the INTEREST RATE column.
PRESS >, J, 1, 0 and RETURN	MOVES the cursor to %PAYMENT column.
PRESS 7, 5 and **RIGHT ARROW**	ENTERS '75' in the %PAYMENT column and moves the cursor to the next input cell.
PRESS 9, 0 and **RIGHT ARROW**	ENTERS '90' in the %PAYMENT column and moves the cursor to the next input cell.
PRESS 1, 0, 0 and **RIGHT ARROW**	ENTERS '100' in the %PAYMENT column and moves the cursor to the next input cell.
PRESS 1, 0, 0 and RETURN	ENTERS '100' in the %PAYMENT column.
PRESS !	RECALCULATES the worksheet.

NOTE: TO PRINT ANY PORTION OF THE WORKSHEET, SEE **AMORT** SECTION.

Fig. 8-5 — cont.



```
              G           H             I          J          K          L
 1  ---------------------------------------------------------------------------
 2  GPAM:          GRADUATED PAYMENT ADJUSTABLE MORTGAGE
 3  ---------------------------------------------------------------------------
 4  LOAN AMOUNT ......................:            80000.00
 5  TERM OF LOAN (MONTHS) ...........:                360
 6  ---------------------------------------------------------------------------
 7  PERIOD ENDING  TERM IN     INTEREST   PERCENT   PAYMENT    ENDING
 8         MONTHS  MONTHS      RATE (%)        OF    AMOUNT   BALANCE
                                          PAYMENT
 9  ---------------------------------------------------------------------------
10             36       36        14.00     75.00    792.49  86256.66
11             60       24        15.50     90.00   1018.66  88923.34
12            120       60        15.60    100.00   1180.51  86716.75
13            360      240        14.05    100.00   1081.49      1.70
14              0                                      0.00      0.00
15              0                                      0.00      0.00
16  ---------------------------------------------------------------------------
17  DIRECTIONS:  INPUT
18                 (1) LOAN AMOUNT
19                 (2) TERMS, RATES, AND CORRESPONDING % OF PAYMENTS
20               PRESS '!' TO COMPUTE RESULTS
21
```

Table 8-3

Helpful Hints on Using GPAM

A. It, sometimes, is necessary to clear an input column, for example, when fewer values are to be entered than are already in the column. Fig. 8-6 illustrates how this is done.

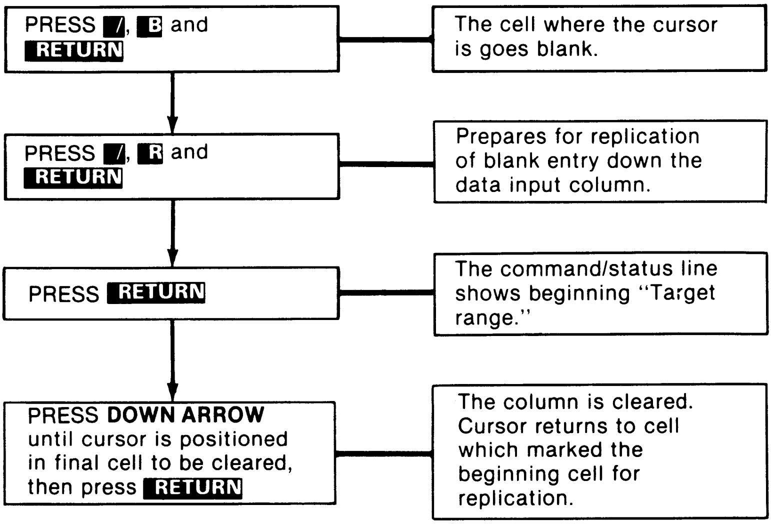
B. Should you accidentally destroy formulas on a calculator by writing over them, simply reload the calculator from your master diskette.

C. You may wish to print this particular worksheet so that you have a hardcopy for your records. Detailed instructions on printing procedures are given in the **AMORT** Section which discusses how to print amortization schedules. Only the coordinates (cells) referencing the begin- and end-print positions will change.

CLEARING A COLUMN IN VISICALC

INITIAL CONDITIONS:
(1) One of the calculators loaded and ready to use.
(2) Cursor located at the top of the column to be cleared.

PROBLEM DEFINITION: Clear an input column of existing entries with the blank and replicate commands.



ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS /, B and RETURN	The cell where the cursor is goes blank.
PRESS /, R and RETURN	Prepares for replication of blank entry down the data input column.
PRESS RETURN	The command/status line shows beginning "Target range."
PRESS **DOWN ARROW** until cursor is positioned in final cell to be cleared, then press RETURN	The column is cleared. Cursor returns to cell which marked the beginning cell for replication.

Fig. 8-6

18. HOW TO USE WRAP: A WRAPAROUND MORTGAGE CALCULATOR

The input for WRAP is the data to be entered in the first eight cells of the screen reproduced in Table 8-4, four items on the FIRST MORTGAGE and four items on the WRAPAROUND MORTGAGE. The ouput consists of the 14 items listed under SUMMARY. The step-by-step instructions in Fig. 8-7 below walk you through a typical problem using GPAM. The corresponding screen is displayed in Table 8-4.

WRAP: WRAPAROUND MORTGAGE CALCULATOR

EXAMPLE OF INPUT AND OUTPUT PROCEDURES

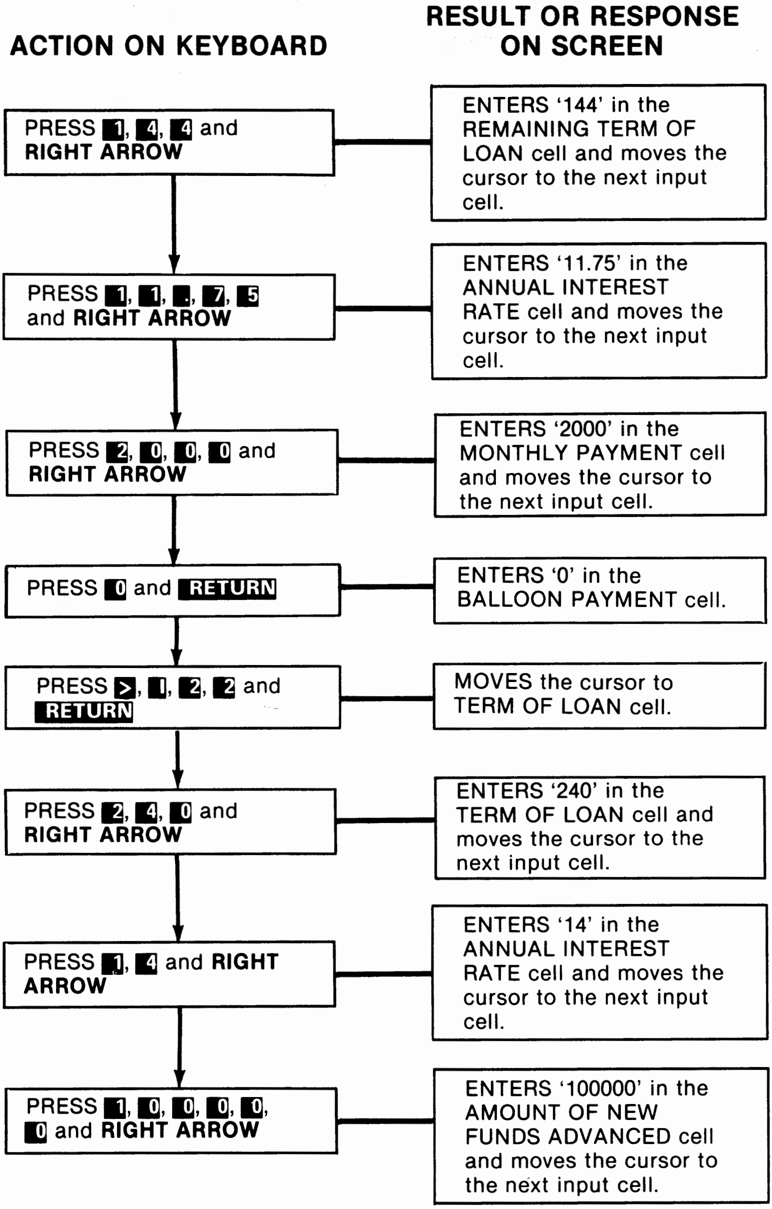
INITIAL CONDITIONS:

1) WRAP loaded and ready to use.
2) CURSOR set at REMAINING TERM cell.
3) CURSOR movement set for up and down.

PROBLEM DEFINITION: Compute the yield on a wraparound mortgage given the following inputs:

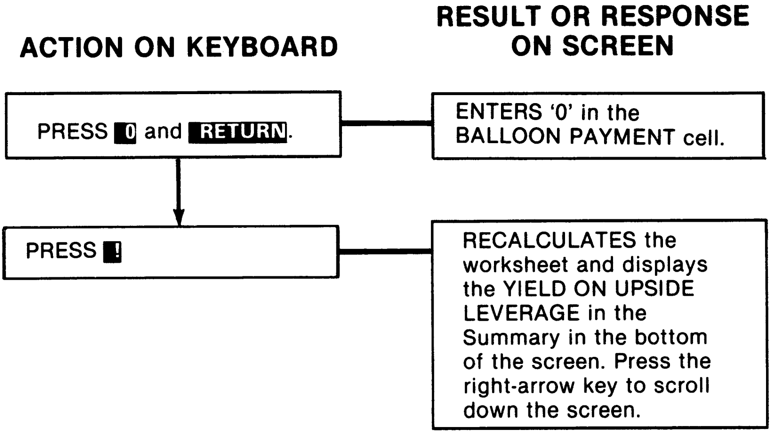
FIRST MORTGAGE	
REMAINING TERM OF LOAN	144
ANNUAL INTEREST RATE	11.75%
MONTHLY PAYMENTS	$2,000
BALLOON PAYMENT	$0.00
WRAPAROUND MORTGAGE	
TERM OF LOAN	240
ANNUAL INTEREST RATE	14%
AMOUNT OF NEW FUNDS ADVANCED..................	$100,000
BALLOON PAYMENT	$0.00

Fig. 8-7



ACTION ON KEYBOARD	RESULT OR RESPONSE ON SCREEN
PRESS 1, 4, 4 and **RIGHT ARROW**	ENTERS '144' in the REMAINING TERM OF LOAN cell and moves the cursor to the next input cell.
PRESS 1, 1, ., 7, 5 and **RIGHT ARROW**	ENTERS '11.75' in the ANNUAL INTEREST RATE cell and moves the cursor to the next input cell.
PRESS 2, 0, 0, 0 and **RIGHT ARROW**	ENTERS '2000' in the MONTHLY PAYMENT cell and moves the cursor to the next input cell.
PRESS 0 and **RETURN**	ENTERS '0' in the BALLOON PAYMENT cell.
PRESS >, I, 2, 2 and **RETURN**	MOVES the cursor to TERM OF LOAN cell.
PRESS 2, 4, 0 and **RIGHT ARROW**	ENTERS '240' in the TERM OF LOAN cell and moves the cursor to the next input cell.
PRESS 1, 4 and **RIGHT ARROW**	ENTERS '14' in the ANNUAL INTEREST RATE cell and moves the cursor to the next input cell.
PRESS 1, 0, 0, 0, 0, 0 and **RIGHT ARROW**	ENTERS '100000' in the AMOUNT OF NEW FUNDS ADVANCED cell and moves the cursor to the next input cell.

Fig. 8-7 — cont.



ACTION ON KEYBOARD

RESULT OR RESPONSE ON SCREEN

PRESS 0 and RETURN.

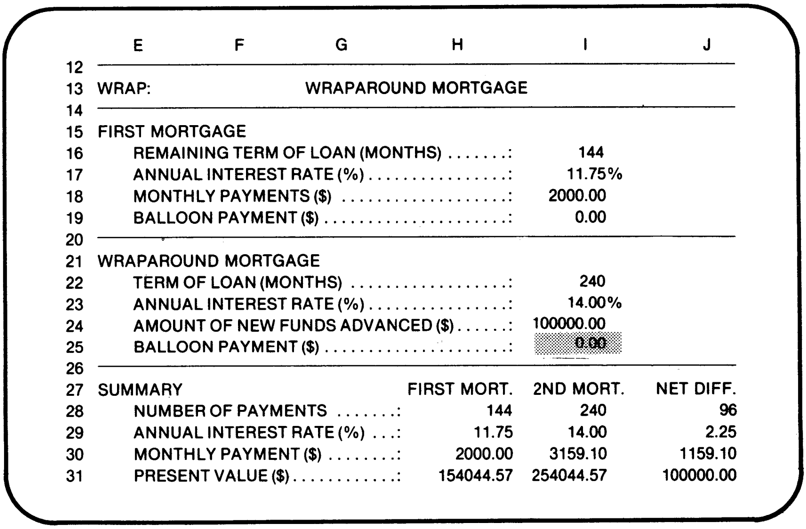
ENTERS '0' in the BALLOON PAYMENT cell.

PRESS !

RECALCULATES the worksheet and displays the YIELD ON UPSIDE LEVERAGE in the Summary in the bottom of the screen. Press the right-arrow key to scroll down the screen.

NOTES: TO PRINT ANY PORTION OF THE WORKSHEET, SEE **AMORT** SECTION. TO VIEW, SCROLL THE SCREEN DOWN.

Fig. 8-7 — cont.



```
         E          F          G          H              I              J
12  ---------------------------------------------------------------------------
13  WRAP:                   WRAPAROUND MORTGAGE
14  ---------------------------------------------------------------------------
15  FIRST MORTGAGE
16      REMAINING TERM OF LOAN (MONTHS) .......:           144
17      ANNUAL INTEREST RATE (%) ................:          11.75%
18      MONTHLY PAYMENTS ($) ...................:         2000.00
19      BALLOON PAYMENT ($) .....................:            0.00
20  ---------------------------------------------------------------------------
21  WRAPAROUND MORTGAGE
22      TERM OF LOAN (MONTHS) ..................:           240
23      ANNUAL INTEREST RATE (%) ................:          14.00%
24      AMOUNT OF NEW FUNDS ADVANCED ($) ......:       100000.00
25      BALLOON PAYMENT ($) .....................:            0.00
26  ---------------------------------------------------------------------------
27  SUMMARY                          FIRST MORT.     2ND MORT.       NET DIFF.
28      NUMBER OF PAYMENTS .......:          144           240              96
29      ANNUAL INTEREST RATE (%) ...:      11.75         14.00            2.25
30      MONTHLY PAYMENT ($) ........:    2000.00       3159.10         1159.10
31      PRESENT VALUE ($)............:  154044.57     254044.57       100000.00
```

Table 8-4

Helpful Hints on Using WRAP

A. Should you accidentally destroy formulas on a calculator by writing over them, simply load the calculator from your master diskette.

B. You may wish to print this particular worksheet so you have a hardcopy for your records. Detailed instructions on printing procedures are given in the **AMORT** Section which discusses how to print amortization schedules. The cell references for the begin- and end-print positions will be the only differences.

NOTES

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